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GLASGOW MEDICAL JOURNAL

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GLASGOW MEDICAL JOURNAL.

EDITED BY

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ORIGINAL ARTICLES.

THE INFLUENCE OF A MEDICAL SOCIETY ON THE POSITION OF THE GENERAL MEDICAL PRACTITIONER.[1]

By JOHN STEWART, M.D.,
President of the Glasgow Southern Medical Society.

Gentlemen,—I have already briefly extended to you my thanks for electing me to fill the office of President of your Society, but I think that on this occasion I should preface my remarks by again expressing my sense of the honour which you have conferred on me. I will not deny that the pleasurable anticipation with which I looked forward to the probability of occupying this chair, was not unmingled with grave apprehensions when I remembered the responsibilities attached to it; and not the least cause of my anxiety was the knowledge that, from use and wont, it would devolve on me to select a subject which could be dignified with the name of presidential address. I hope that the few remarks which I am about to make may seem to you appropriate to the occasion. I should say that in noting them down I have had in my mind what may be defined as the bearing of a medical society on what is required of the general medical practitioner, and his present and future position in the ranks of medicine.

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[1] Presidential address delivered before a meeting of the Glasgow Southern Medical Society held on 31st October, 1901.

Our Society has now entered upon its fifty-eighth year, and, perhaps, never before in its history, have two of the main objects for which it was formed—viz., the mutual improvement in professional knowledge, and the promotion of amicable feelings among its members—been called on to play so important a part in professional life and in medical practice. The reason is not far to seek: the great and rapid advance in the science and art of medicine and surgery is the cause.

It must be difficult, indeed, for a man living, as it were, apart from his professional brethren, and depending for his knowledge of medical affairs on his own limited experience and the professional literature which, in his spare time, he is disposed to read, to keep himself fully alive to the progress of medical science or the scope of surgical art. Yet it was never more necessary than it is at present, that he should be alive to modern progress, not merely for his own satisfaction or personal benefit, but because medical science, in its own interest, demands that he shall be at least cognisant of its principles and powers. For it is not too much to say that the general medical practitioner, or, if you will, the family doctor, plays a very important part in the successful application and in the further development of those medical and surgical therapeutics which modern science has indicated and the power of art made possible. Does not the general practitioner stand between the patient and the expert? who is thus, to a great extent, dependent on him, and on his prompt and enlightened appreciation of the possibilities of modern medicine for the effective application of the resources at his command. Take, for example, acute abdominal cases—say, even, a tubal pregnancy or a perforated ulcer. Of what avail is it to the patient or the surgeon to know that these are within the power of art to deal with safely and surely, if the general practitioner, in the first place, has been slow to recognise the conditions, or has failed to appreciate the possibilities of modern surgery?

These are but simple examples, but they are sufficient to illustrate the point that, in the practical application of the teachings of modern medical science, the master in the art requires, in no small degree, the intelligent co-operation of the family doctor.

The prime object of our Society is to supply the demand which modern medical science makes on the general practitioner. At our meetings here, attention is directed to some of the recent researches and developments in the general and special departments of medicine. The papers and demonstrations given throughout the session convey a fairly comprehensive idea of the scope of modern medicine, and tend to awaken an enthusiastic desire for further enlightenment. Composed, as our Society is, for the most part, of general practitioners, its success is in itself an indication that the signs of the times are being noted and attended to; but other evidence is not wanting to show that the position in the ranks of medicine of the family doctor of the future is perfectly assured. This is not the universal opinion. It has been said that this is an age of specialism, and that the tendency in medicine is to develop practitioners in special branches to the more or less complete obliteration of the general practitioner. This view is frequently expressed in conversation with the lay public, who consider that the great advance in scientific knowledge, and the prominence given of late years to the special departments of medicine, seem to indicate that in the near future specialism will reign supreme. In the minds of some, it would appear that such a condition already exists in some places, as is shown by this extract from a lecture delivered before the Hahnemmanian Society, New York, and which was copied from an American paper into our own public prints some time ago. "Human evolution," says the lecturer, "splits the science and art of medicine into a hundred specialties, and has killed off an individual once known as the 'family doctor.' This individual was formerly called in to attend all the ailments from which a patient might suffer. He was always ready, and doctored the eyes, the nose, and the throat, as well as set bones and lanced felons. He probed wounds and sewed cuts. He ate and drank with the family, and the family loved him. No such being exists upon the earth to-day, except, perhaps, in some untelephoned and untelegraphed region where, as yet, human evolution has not laid its hands."

That the beloved family doctor is as extinct as the lecturer would have us believe, even in a country so far advanced in civilisation as the United States of America, is very doubtful, but the possibility of such occurring in the future is certainly present in the minds of not a few. Should such a complete extermination of that species of the *genus medicus* known as the "family doctor" ever occur, it will, I venture to think, be a regrettable thing, both for the profession and the public. The probability, however, of such an event happening is, in my opinion, very remote. Nearly all the sentiment—all the romance—surrounding the practice of medicine, is centred in the family doctor, and are we to believe that this must end? Where, among scientific specialists or consultants, could the novelist, who appeals to the finer sentiments of human nature, find a character like old Dr. M'Clure? or, who among all the practitioners of medicine, other than the family doctor, could command the love and affection of suffering patients like old Dr. Winter? and do we not recognise it as being true to nature, that his two highly trained opponents should themselves shrink with loathing from the cold touch of science, and crave for his kindly, sympathetic presence, when their own "fainting natures called for aid?" The sentiment expressed in Luke Fildes' "Doctor" may be denied by the matter-of-fact consultant or specialist who never felt the pains nor knew the pleasures of general practice, but the multitude who have known tribulation see in the subject not merely a pathetic incident, but the expression of a truth by a master mind, for which they find a parallel in their own experience. Surely, so long as human and religious sentiment exists, so long as human affections form a connecting link between heaven and earth, so long will the family doctor not only find a place in the economy of the world, but retain his position in the estimation of the public in general, and of suffering humanity in particular.

But, passing from sentiment, which some of you may think a poor foundation upon which to rest our claims for perpetuation, the consideration of facts gives further evidence that the days of the general practitioner are not yet numbered.

We know that great changes have taken place in the practice of medicine and surgery within recent years. None of us here, perhaps, can go back in memory to old pyæmic days which are now historical; but even to recall the practical teaching of fifteen or twenty years ago, when many of us were students, and compare it with that of the present time, is wonderful enough. The old antiseptic spray—steaming away constantly in the wards—is gone for ever; and the prophecy of George Buchanan, that many of us would live to see the apparatus exhibited in the museum as a curiosity, is practically fulfilled. At that time, too, any operation involving the opening of the peritoneum was regarded as almost the acme of surgery, and the theatre would be filled with students and practitioners anxious to see it. Even more marvellous still, to contrast the teaching of gynæcology then and now. How the sacredness of the uterine cavity was impressed upon us! Many may recall Professor Leishman's dictum that every uterine sound should have the model of a skull and cross-bones attached to remind us of the dangers connected with its use. And to-day, the peritoneum is not only opened in the performance of surgical operations for disease, but exploratory for diagnostic purposes without the slightest trepidation; and the uterine sound and probe are but trifles compared with the lethal weapons which are daily passed into the womb.

Yes! great changes have taken place in the practice of medicine and surgery within recent years; but twenty years ago a similar remark was, no doubt, made, yet during all these intervening years of scientific advancement the family doctor has shown no sign of decay. Like his art, he also has changed. The family doctor of caricature has passed away, but his place is supplied by an educated practitioner capable of appreciating the teachings of science. Since, then, up to the present time, the general practitioner, instead of being overwhelmed or pushed aside by the rapid advance of science, has kept pace with it; how is it that there should be any idea that the "passing of the family doctor" is at hand? The explanation, I think, is to be found in the great elaboration of the art as distinguished from the science.

The scope of the art of medicine and surgery has widened enormously of late. So much can now be done, so much *must* now be done—and done by the doctor himself—that one may question the possibility of a man, no matter how extensive or thorough his knowledge of the subject may be, acquiring the necessary skill and manipulative dexterity within the limited sphere of a family practice. This is no doubt true, and fortunately it is so, for the art of medicine and surgery could have reached no high level if it were possible for the family practitioner to do all that his science teaches. Medicine is too comprehensive for that. It will always require its consultants and specialists, but it must always demand that these be past masters in the art.

But while it is true that the sphere of our art has extended, it affords no feasible argument for assuming that the general practitioner will be unable to respond sufficiently to modern requirements. Just as we saw that he is alive to the dictates of science, so there is evidence that he is not unmindful of his art. The experience of hospitals must show this. Compare the hospital cases of to-day with those of, say, less than twenty years ago. At that time antiseptic principles were elaborately carried out, and the surgical wards were filled with what we should call septic cases. Suppuration was everywhere, and the different characters of pus were pointed out and commented on. Sweet smelling, laudable pus was not objected to.

To-day the aseptic system is in full swing, and the house surgeon knows well that an unwritten law commands him to prevent as far possible the entrance of purulent cases into his wards. Rightly so; but where are the common septic hospital cases of long ago? Will you not find them in the hands of the family doctor, and attended to according to the laws of surgery and the principles of antiseptics? and the application of great principles in detail to even such simple conditions is surely training for greater things.

To the student of to-day, familiar with the brilliant diagnostic and therapeutic achievements of modern medical science, such illustrations may seem but trifles; but just as straws show how the wind blows, so do these simple facts indicate an ambitious desire on the part of the general practitioner to master his art according as the necessities of his practice demand or facilities allow.

In a high-class practice there may be no necessity for the general practitioner to aspire to great heights in his art—special expert assistance can readily be obtained; and among the very poor there may, perhaps, be no great facilities for acquiring any distinctive pre-eminence—the hospitals and dispensaries are open for them; but among the large middle-class portion of the community there is a very special necessity for the practitioner to widen as much as possible the personal range of his art, or otherwise, abuse of hospitals and dispensaries, instead of abating, will become more flagrant. But, as I have said, there is evidence that the general practitioner is, of late years, devoting more attention to his art. Compared with twenty years ago, he has advanced considerably. Will he be able to continue to do so? There can be no question that he must. The difficulties in the way are very apparent; but these must be overcome by devoting more attention to the developing of resources, and to the creating of facilities where none appear to exist. To a certain extent this is being accomplished by some, and I doubt not but that a spirit of emulation will lead others to follow. It is in this connection that the second object for which our Society was formed may be made to play a very important part. In amicable relations with one another, but more especially in an intimate and confidential acquaintance with one or more neighbouring practitioners, is to be found the key to further advance of medical and surgical art in family practice. Assisting one another is the secret of success in this direction, and such assistance will be more readily sought and obtained the more the second great object for which our Society was founded is developed. The value of mutual assistance is readily recognised, and it may seem superfluous to lay stress on it here, but too much cannot be said on the necessity of extending it to the common minor surgical conditions of almost daily occurrence in a working-class practice.

It must be admitted that wherever the principles of antisepticism or asepticism should be applied—no matter how apparently trivial the conditions requiring them may be—to be effective, thoroughness is essential, and this can only be accomplished in most cases with skilled assistance. Besides, only by the frequent and thorough practical application in detail of the great general principles alluded to can an accurate and comprehensive knowledge of them be gained. But there is no need to dwell longer on this subject. It is not within the scope of this address to point out the value of practical experience--it is quite unnecessary to do so; nor is it to say how the economic and other difficulties in the way of acquiring such, in a working-class practice, may be overcome. I have merely desired to indicate how necessary it is for the general practitioner to watch the development of medical affairs. I have attempted to show that he has advanced proportionately with the times, and is, to a great extent, fulfilling the requirements of modern medicine both in its scientific and practical aspects. At the same time, I have endeavoured to emphasise the influence which our Society exerts in this direction, hoping in this way to encourage your attendance at our meetings and increase your interest in our work.

I have now, in closing, only to express the opinion that, for the wellbeing both of the public and the profession, the future development of medical practice should not be too much in the direction of greater subdivision of labour, nor of increasing to any great extent the number of practitioners devoted solely to one particular branch; but, rather, should incline towards the production of a highly specialised general practitioner, whose very existence would insure that consultants and specialists be men of outstanding merit in their various departments of medicine.

SURGICAL DISEASES OF THE KIDNEY: THEIR GENERAL SYMPTOMATOLOGY AND PHYSICAL DIAGNOSIS—WITH ILLUSTRATIVE CASES.

By DAVID NEWMAN, M.D.,
Surgeon, Glasgow Royal Infirmary.

(*Continued from* p. 374, vol. lvi.)

III. *The presence of albumens or of toxins in the urine* requires to be referred to briefly, only for the purpose of showing their value as indications of the diseases now under consideration.

Many physicians who have written on the subject distinguish two kinds of albuminuria—true and false. With a view to present to the reader a lucid and concise statement from the physician's standpoint, I quote from an article in Quain's *Dictionary of Medicine.* Sir T. Lauder Brunton states briefly and clearly the generally accepted view in respect to this classification. He says:—"In order to distinguish more clearly between the different kinds of albuminuria, we may divide them into (1) *false* albuminuria, in which some other albuminous body than serum-albumin is present; (2) *true* albuminuria, in which serum-albumin, frequently accompanied by globulin, appears in the urine. In *true* albuminuria there is always some change, either in the circulation through the kidney or in the structure of the kidney itself. In *false* albuminuria, the albuminous body passes out through the kidney without there being any alteration either in its circulation or structure.

"(1) *False albuminuria.*—The chief albuminous bodies occurring in false albuminuria are hæmoglobin, egg-albumin, globulin, and Bence-Jones's albumin (albumose). Hæmoglobin occurs in the urine whenever blood is present in it, in which case it is contained in the corpuscles; or it may occur free, the blood-corpuscles, while still circulating in the vessels, having undergone solution. This may result from the inhalation of arseniuretted hydrogen, or from the introduction of bile-acids or of a large quantity of water into the veins. Hæmoglobin is also found in the urine in paroxysmal hæmoglobinuria, but the cause of the solution of blood-corpuscles in this disease is unknown. Egg-albumin is excreted by the kidneys, and appears in the urine whenever it is injected directly into the circulation or under the skin, or when it is absorbed unchanged from the stomach or rectum. When taken into the stomach, it is usually completely digested before it undergoes absorption, but when taken in such large quantities that the whole of it cannot be digested, part of it is absorbed unchanged and is excreted in the urine. Thus, a diet consisting exclusively of eggs, especially when continued for several days, produces false albuminuria, and large enemata of eggs have a similar effect in animals, and probably also in man. Bence Jones's albumin is of very rare occurrence. It is found in osteomalacia. Like egg-albumen, it is excreted by the kidneys when it is injected into the circulation or in large quantities into the intestine. It is almost, if not quite, identical with the hetero-albumose which Kühne finds to be one of the products of imperfect digestion. It seems probable that those cases of albuminuria which appear to depend on imperfect digestion are due to the passage into the systemic circulation of albuminous bodies which have not undergone the proper transformation in the alimentary canal or liver.

"(2) *True albuminuria.*—In true albuminuria there must be some change, either in the circulation or structure of the kidney, for serum-albumin differs from the other albuminous bodies just mentioned in not being excreted by the healthy kidney. Some regard the alterations in the circulation which produce albuminuria as of two kinds:—(*a*) Increased pressure of blood in the renal arteries; (*b*) increased pressure in the renal veins. Increased pressure in the arteries may depend either on general high arterial tension, or upon an increased local supply of blood to the kidney owing to dilatation of the renal arteries, such as follows division of their vaso-motor nerves. Experiments seem to show, however, that increased tension in the renal arteries does not produce albuminuria, and that the only change in circulation which will cause it is increased pressure in the renal veins. Congestion of the renal veins may be produced by ligature of the renal arteries; and when the flow of blood through the kidney is temporarily arrested by ligature of the artery, the urine secreted after the removal of the ligature is albuminous. Venous congestion of the kidney also occurs whenever the onward flow of venous blood is obstructed, either by a ligature on the renal veins; by the pressure of a tumour or of the pregnant uterus upon them or the vena cava; by disease of the liver obstructing the vena cava; or by disease of the heart or lungs, such as tricuspid or mitral regurgutation, or chronic bronchitis and emphysema. The temporary albuminuria sometimes observed after cold bathing may also be due to venous congestion; and it is probable that albuminuria consequent upon lesions of the nervous system is due rather to the changes which these produce in the circulation, than to any direct action of the nerves upon the tissues of the kidney itself. The albuminuria observed after varnishing the skin is probably due to the retention of some substance which acts as a poison. The structural changes in the kidney which cause albuminuria are acute and chronic inflammation, waxy degeneration, and cirrhosis."

May we observe that Sir T. Lauder Brunton in the first instance classifies cases according to the chemical reaction given by the albuminous bodies found in the urine, and then links on certain pathological qualifications as if there were some correlation between the two methods of grouping—the chemical and the clinical. Unfortunately, no such correlation exists when all forms of albuminuria—renal and extra-renal —are included. The classification fails in so far that it takes no cognisance of those cases in which albumen is added to the urine after it has escaped from the kidney. It is accepted, however, by many medical writers. Others define "false" as being synonymous with "extra-renal" or "accidental" albuminuria, the albumen being added to the excretion after it has left the kidney, as in pyelitis and in catarrh of the bladder, as well as in prostatic and spermatic albuminuria. On the other hand, under renal or true albuminuria are included not only the whole class of maladies which come within the heading of "Bright's disease," but also others in which there is no definite structural change in the renal tissue, as in albuminuria arising from mechanical causes which influence the blood-pressure within the kidney—for example, muscular exercise, pregnancy, movable kidney, abdominal tumours, &c. The latter classification is the one most acceptable to the surgeon, who should endeavour to answer the following questions:—

1. Is the albuminuria entirely due to the presence of blood or of pus in the urine?
2. Is the albumen derived from the kidney or from the lower urinary tract?
3. If derived from the kidney, is the albuminuria due to Bright's disease or is it a result of other causes?

To clear up these points is of great importance when operative interference is contemplated.

1. (*a*) *In cases of hæmaturia*, to determine whether the albuminuria is entirely due to the presence of blood is often

necessary. Urine containing blood is always albuminous, but the relative proportion existing between the red corpuscles found in the urine and the albumen present depends upon whether or not the hæmorrhage is associated with inflammation. For example, in acute nephritis not only do the elements of the blood escape, but the general inflammatory hyperæmia causes a large quantity of albumen to pass into the urine independently of the hæmorrhage. The relationship between the quantity of hæmoglobin and the amount of albumen in the urine will, therefore, aid one in determining the seat of the hæmorrhage.

An apparatus for estimating, by a simple method, the quantity of hæmoglobin in solutions was shown by the writer at a meeting of the Glasgow Pathological and Clinical Society in 1880.

When homogeneous white light is passed through a solution containing a small quantity of blood pigment (hæmoglobin), the spectrum, instead of being continuous, is seen to be intersected by dark absorption bands. The presence of these bands affords a means of detecting the presence of hæmoglobin, and of estimating it quantitatively. Blood pigment exhibits a very characteristic absorption spectrum. Hæmoglobin, while in a very dilute solution, gives two absorption bands—one in the orange and another in the green portion of the spectrum, between Frauenhofer's D and E lines. The one next D is narrower, blacker, and more sharply defined than the band close to E, and, on diluting the solution, it is the last to disappear. The former is still present when a solution containing 1 part of hæmoglobin in 22,000 parts of water is examined, the stratum being equal to 2 centimetres in thickness, while in so dilute a solution the band next E is no longer apparent. The point at which the band next E disappears having been determined, we have a means of estimating the percentage of blood-colouring matter in the solution.

The instrument is somewhat similar to the hæmatoscope employed by Hermann. It consists of a brass tube, about 10 cm. long and 2 cm. in diameter; one end is closed by a glass plate, and into the other extremity a sliding, watertight piston is introduced. This piston consists of a smaller brass tube, the inner end of which is also closed by a glass plate, while into the other end a small spectroscope is introduced. By passing the piston into the larger tube, a cell is formed (by the walls of the outer tube and the two glass plates), the depth of which may be modified within certain limits by sliding the piston out and in, and the thickness of the enclosed stratum of fluid may be measured by means of a scale engraved upon the inner tube. The fluid to be examined is passed into the cell through a hole in the outer tube close to the glass plate.

Suppose we wish to estimate the percentage of hæmoglobin in a solution, we know, to start with, that in a solution containing 1 part of hæmoglobin in 22,000 parts of water we lose the absorption band next E when the stratum is 2 cm. thick. Now, if the solution be more concentrated, we cease to see the band next E with a thinner, and if it be less concentrated, with a deeper stratum, the depth of the layer being in an adverse ratio to the concentration of the solution; therefore, by a simple calculation, the quantity of hæmoglobin may be estimated. When the solution contains more than 1 per cent of hæmoglobin it is necessary to dilute it so as to make the observation more exact.

Now, if 1 c.cm. of defibrinated blood be added to 100 c.cm. of urine, the mixture will be found to contain 0·124 per cent of hæmoglobin, and about 0·078 per cent of albumen coagulable by heat. While the quantity of blood is sufficient to impart to the urine a dark red colour, there is an extremely small quantity of albumen. This simple experiment prepares one for the fact observed by clinical experience, that the admixture of blood with the urine, after it has been secreted, is not associated with any considerable albuminuria.

The quantity of hæmoglobin having been estimated, and the amount of albumen determined by one or other of the recognised processes, the two results should be compared. If the ratio of albumen to hæmoglobin is as 1 to 1·6, then it may be concluded that the appearance of albumen is entirely due to the presence of blood; but if the quantity of albumen is much increased beyond the proportion just mentioned, the indication is in favour not only of an independent albuminuria, but also points to a renal affection as the cause of the hæmaturia.

Goldberg employs a different method, viz., by counting the number of blood corpuscles in a given quantity of urine, he thereby determines whether the whole of the albumen present in the urine is accounted for by the presence of blood. For example, if 1 c.cm. of urine is found to contain 50,000 red blood corpuscles, it is concluded that the urine contains 1 per cent of blood, since the normal number of corpuscles in 1 c.cm. of healthy blood is 5,000,000. On this basis it is simple to calculate the quantity of albumen derived from the presence of blood and that present from other sources.

(*b*) *In cases of pyuria,* to estimate how far the presence of albumen is due to pus, a somewhat similar method is employed. Goldberg has endeavoured to detect renal albuminuria in cases of pyuria. By means of the centrifuge he determines the percentage of pus present in the urine, and by observation he found that 100,000 pus cells in 1 c.cm. of urine accounted for 1 per cent of albumen; and, reasoning from this conclusion, it is easy to see that if the quantity of albumen exceeds 1 per cent, while the number of pus corpuscles fall short of 100,000 in 1 c.cm. of urine, the albuminuria is not entirely due to the suppurating lesion.

2. *Is the albumen derived from the kidney or from the lower urinary tract?* When albuminuria is associated with hæmaturia or with pyuria, an examination with the cystoscope may give valuable information, as already indicated (vol. Iv, p. 244 *et seq.*), and the employment of the ureter catheters may not only demonstrate that the albuminuria is entirely renal, but may also show that it is due to a unilateral or to a bilateral lesion. Besides employing the methods just indicated, it is important to make a careful examination of the bladder and ureter, and conduct a full enquiry into the history of the case. In not a few instances, the urine is rendered albuminous by contamination with the exudation from inflammatory lesions infecting the ureters, the bladder, or the urethra, and this without the presence of either pus or blood. It must be borne in mind that several independent causes may simultaneously contribute to the albuminuria. When the circumstances of the case permit a leisurely enquiry to be made, it is not sufficient to discover one factor only; frequently the problem is a difficult and complicated one, and it is only by a prolonged, careful, and minute enquiry that anything like an exact diagnosis can be arrived at. Unfortunately, in many instances, the urgency of the malady demands immediate intervention, and time is not allowed for refinements in diagnosis. The best the surgeon can do in such instances, is to gain sufficient information to justify the adoption of a line of treatment suitable immediately to the individual case. In all instances, however, a microscopic examination of the deposit may be made, and from it much information may be gained. The presence of renal tube-casts always indicates a morbid lesion in the kidney, and a special pathological condition may be determined by the individual peculiarities of the casts. For example, granular casts, fatty casts, or epithelial cells which have undergone fatty metamorphosis, indicate chronic nephritis; epithelial casts, especially

when associated with a large quantity of albumen in the urine, denote an acute nephritis, and this may be associated with the presence of blood-casts: but, in acute nephritis, the blood-casts differ from those found in simple congestive hyperæmia, in so far that they are not made up of blood corpuscles alone; but, along with the blood, there are other histological elements—such as epithelium and leucocytes, as well as micro-organisms—which denote the lesion to be inflammatory in its nature. Blood-casts do not therefore necessarily indicate organic disease of the kidney, although they do give undoubted evidence of a hæmaturia of renal origin. Pus-casts are very rare, and, like bacterial casts, signify septic inflammation of the renal parenchyma. When casts containing amyloid material—proved to be so by their reaction to staining agents—are present, they may be looked upon as pathognomonic of amyloid infiltration of the kidney.

3. *If derived from the kidney, is the albuminuria due to Bright's disease, or is it a result of other causes?* Under this heading, it may be well to consider the surgical diseases in which albuminuria is a symptom—independent of pus or blood—in order to compare and contrast them with the more common causes, such as acute or chronic parenchymitis or interstitial nephritis and amyloid disease. The surgical diseases of the kidney which give rise to albuminuria are—

(*a*) Movable kidney.
(*b*) Early tuberculosis.
(*c*) Early syphilis.
(*d*) Hydronephrosis.
(*e*) Cystic degeneration.
(*f*) Tumours.
(*g*) Injury.

(*a*) *Movable kidney.*—In cases of movable kidney, the displacement of the organ may lead to twisting of the vessels, the nerves, and the ureter, in such a way as to impede the circulation. When the obstruction to the venous return is slight and of short duration, the only changes observed in the urine are a diminution in the quantity of the excretion and the presence of albumen; but, if the obstruction be serious and prolonged, tube-casts, and in the most severe cases blood, may be found in the deposit. This form of albuminuria is transitory, and is associated with dull aching pain in the lumbar region, gastric disturbance, and perhaps even nausea and vomiting, which continue as long as the organ is displaced;

but, when restored to its normal position, there is a subsidence of the renal pain, followed by a copious flow of urine of high specific gravity. The albuminuria generally disappears in a few hours if the patient is kept at rest in bed.

(*b*) *Early tuberculosis.*—In the early stages of tuberculosis of the kidney slight albuminuria may be induced by the extra work forced upon the organ in the elimination of toxic material. This increased functional activity gives rise to an active hyperæmia almost amounting to diffuse sub-acute inflammation. The urine furnishes important information. One of the first indications of a tuberculous lesion in the kidney is polyuria, probably due to the active hyperæmia just referred to. It is a symptom which is very apt to be overlooked unless when associated with albuminuria. The presence or absence of albumen seems to depend partly upon the degree of hyperæmia, and whether or not the tuberculous lesion freely communicates with the urinary tract. If the disease is located in the kidney substance, all inflammatory products are kept shut off, and do not mix with the excretion. Frequently in the early stage the hyperæmia is so marked that it produces a hæmaturia.

(*c*) *Early syphilis.*—In syphilis the kidney becomes occasionally involved, both during early and secondary stages. Mauriac corrected 23 cases, in 8 of which albuminuria appeared two months after the onset of the disease; and Forbrigur found albumen and tube-casts in 12 per cent of cases during the roseola stage. Renal syphilis seems, however, to be most common in the later stages, when it leads to interstitial changes, to the formation of gummata, or induces amyloid disease. In such cases the history usually clears up the diagnosis. Drs. Oscar and Petersen found that, in the examination of two hundred consecutive cases of syphilis, in 27·5 per cent, albumen appeared in the urine; in 14 per cent, it was dependent upon accidental causes, such as gonorrhœa, prostatitis, balanitis; in 9·5 per cent, the albuminuria was transitory; while in the remaining cases it was permanent.

(*d*) *Hydronephrosis.*—In cases of old standing hydronephrosis, where the obstruction is incomplete, the appearance of albumen in the urine is associated with diminution in the size of the swelling, occasioned by an escape of fluid from the sac. In cases of transitory hydronephrosis the alternate expansion and relaxation of the hydronephrotic sac seems to induce a sufficient disturbance of the circulation in the kidney to cause the escape of small quantities of serum-albumen. Albuminuria arising in such cases differs from what is found in organic disease of the kidney, in so far that the quantity of albumen is very variable, and the symptom is not associated with the general constitutional disturbances found in the various forms of Bright's disease.

(*e*) *Cystic degeneration.*—The urine in polycystic kidney varies according to the stage of the disease; the secretion may be strictly normal, or it may have the characteristics belonging to chronic Bright's disease. Of 105 cases recorded, in only 40 per cent the urine contained albumen, and in most instances the quantity present was small. While in the early stages of the disease urinary symptoms are generally absent, as a rule, as the disease advances, the urine is found to contain albumen and granular tube-casts. Frequently, however, the albuminuria is intermittent, and urea is often diminished in amount. The disease is by no means a common one, and when present the bilateral enlargement of the kidney, and the absence of symptoms (except in the later stages of the disease), are so characteristic that little difficulty is experienced in forming a diagnosis.

(*f*) *Tumours.*—In tumours of the kidney, independently of blood and pus, albuminuria is uncommon, and when it occurs it depends rather upon the physical presence of the growth causing obstruction to the venous return, than to anything in the morbid growth. Large tumours may be present in a kidney without albumen being discovered in the urine, except what may be due to hæmorrhage.

(*g*) *Injury.*—In cases of traumatisms of the kidney the occurrence of hæmaturia is the most important clinical fact in the diagnosis. The patient receives a blow in the small of the back, and within a short time blood appears in the urine. This may continue for a few days, but not infrequently long after the hæmaturia has ceased albuminuria persists in unvarying quantity, and then, after a few weeks or months, the albumen entirely disappears. These cases are of much interest, and it is difficult to explain or imagine the precise morbid changes which induce the persistence of the albuminuria long after the hæmaturia has ceased, but as a clinical fact it is of importance.

(*To be continued.*)

THE NITRO-PROPIOL TEST FOR SUGAR IN URINE, BASED ON TWO HUNDRED OBSERVATIONS.[1]

By CARSTAIRS DOUGLAS, M.D., B.Sc., F.F.P.S.G., F.R.S.E.,
Professor of Medical Jurisprudence and Hygiene, Anderson's College Medical School; Director of the West of Scotland Clinical Research Laboratory, Glasgow.

The notices of this test, so far as I have seen them, have been, on the whole, of a favourable character, and have induced me to give the matter some consideration. I desire to lay before you to-night the results of my experiences with it, based on over two hundred observations, as well as the conclusions I have drawn from these.

I. *The nature and rationale of the test.*—The reaction depends on the fact that the organic substance ortho-nitro-phenyl-propiolic acid, when heated with grape-sugar and an alkali, yields indigo-blue, thus—

$$2\,C_6H_4(NO_2) - C - C - CO_2H + {}_2H_2 = C_{16}H_{10}N_2O_2 + 2\,CO_2 + 2\,H_2O$$

Ortho-nitro-phenyl-propiolic acid. Indigo-blue.

The glucose acts here by yielding nascent hydrogen. This acid, which we may more conveniently designate by its trade name—nitro-propiol—is derived from propiolic acid, which, in its turn, is a derivative of the unsaturated hydrocarbon acetylene, thus—

$H - C - C - H$	$H - C - C - CO_2H$	$C_6H_4(NO_2) - C - C - CO_2H$
Acetylene.	Propiolic acid.	Nitro-propiol.

The discovery of the above and other methods of preparing indigo-blue we owe to Baeyer, and it is not too much to say that they have revolutionised the indigo trade, for this important dye (formerly obtained only from plants such as the Indigofera tinctoria and Isatis tinctoria) is now prepared synthetically by laboratory processes. Baeyer prepared the nitro-propiol at first from cinnamic acid, which was at one time only obtainable from the balsams of Peru and Tolu, till Perkins showed how it could be made synthetically from toluene, a cheap element in coal-tar. Later on, it was found that this method was too expensive for commercial purposes, and within the last two or three years Baeyer has perfected a much cheaper method, the starting-point of which is naphthalene; this process is now carried on extensively at the Baeyer chemical works at Oberfeldt, in Germany. Indeed, I am assured on good authority that no native indigo at all is now imported into Germany; on the contrary, so much is artificially made that some is actually exported. This is, however, strictly speaking, beyond the matter in hand. Let me just remind you again that by boiling nitro-phenyl-propiolic acid with glucose, in the presence of an alkali, indigo-blue is readily produced.

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[1] Read before a meeting of the Glasgow Medico-Chirurgical Society held on 1st November, 1901.

The reaction, or that on which the detection of sugar depends, is very striking, as a practically colourless solution becomes a deep opaque blue in the course of a couple of minutes boiling. The glucose acts essentially as a reducing agent, yielding nascent hydrogen.

To perform the test, one takes an ordinary test-tube, not too narrow, and places in it from 10 to 15 drops (or 1 c.cm.) of the urine; this is then diluted with 7 or 8 c.cm. of water (about an inch and a half in an ordinary test-tube), and the reagent then added. The latter is conveniently put up in tabloid form, combined with a little sodium carbonate, so that the alkali is supplied at the same time. One of these tabloids is dropped into the watery solution, and the whole well boiled, when very small quantities of sugar will be revealed by the development of a deep blue colour. If, after cooling, a little chloroform be added and the tube well shaken, the chloroform will sink to the bottom, carrying with it the indigo (of which it is a good solvent), and forming a deep blue layer, while the rest of the fluid will be largely decolorised. There are only two precautions which must be adopted under ordinary circumstances, and these are:—

1. The urine must be well diluted, or, in other words, the amount of sugar present must be small; otherwise, it may yield not only enough hydrogen to produce indigo-blue, but also to convert the latter into indigo-white, thus—

$$\underset{\text{Indigo-blue.}}{C_{16}H_{10}N_2O_2} + H_2 \quad = \quad \underset{\text{Indigo-white.}}{C_{16}H_{12}N_2O_2}$$

in which case no blue colour develops at all. In all cases, the dilution must be done before boiling with the nitro-propiol, and in ordinary cases 15 drops of urine should be mixed with 7 to 10 c.cm. of water. If, under these conditions, the blue colour is not well marked, it indicates that but a small quantity of sugar is present—say, less than 1 in 1,500—and the test may be performed again with 5 c.cm. of undiluted urine, when much less sugar than that mentioned above will develop a distinct indigo coloration.

2. Care must be taken that the contents of the tube are *well* boiled. For this, a test-tube holder is a great aid, but this can be easily improvised out of a piece of stout paper.

II. *The degree of delicacy of the test and its comparison with other reactions for sugar in urine.*—Having satisfied myself by frequent examinations in cases of diabetes or well-marked glycosuria that the test was satisfactory, I next proceeded to try it with varying amounts of sugar, contrasting it with Fehling's solution, phenyl-hydrazine, and yeast. I may state here that what I have to say about the nitro-propiol reactions is based entirely on my own observations.

Indigo-blue is produced not only by grape-sugar, but also by milk-sugar in urine. Of twenty cases of nursing mothers examined at the Glasgow Maternity Hospital, the test was positive in nineteen, owing to the occurrence of lactosuria. The only case which did not respond to it was that of a woman in the first day of her puerperium, and before lactation was fully established.

Maltose in watery solution also responds readily to nitro-propiol, and the same is true when it is added artificially to sugar-free urine.

Cane-sugar has no visible effect, whether in aqueous or urinous solution.

A large number of tests were conducted to determine the delicacy of the test and the smallest amount of grape-sugar that could be detected in this way. In each case, 1 c.cm. of the test solution was diluted with 10 c.cm. of water, a tabloid of nitro-propiol added, and the whole boiled.

The following general results were obtained :—

A. Aqueous solutions of glucose.

1. One c.cm. of 1 in 500 (0·2 per cent) yielded a dark, greenish-blue fluid; the chloroform extract was a distinct indigo.

2. One c.cm. of 1 in 1,000 (0·1 per cent) gave a pale, greenish-yellow liquid, and a blue chloroform extract.

3. One c.cm. of 1 in 1,500 (0·06 per cent) yielded a yellowish fluid, with a suggestion of green; the chloroform extract was distinctly blue.

4. One c.cm. of 1 in 2,000 (0·05 per cent) produced a pale-yellow, dull fluid; the chloroform extract was a delicate blue.

5. One c.cm. of 1 in 3,000 (0·03 per cent) gave a dull, straw-tinted liquid; the chloroform extract was a delicate blue.

The amount of sugar in 1 c.cm. of a 1 in 3,000 solution is as little as 0·3 mgr., or about $\frac{1}{250}$th grain.

Various intermediate strengths were tested. If, of the solutions of 1 in 2,000 and 1 in 3,000, 5 c.cm. were tested *undiluted*, a very distinct blue fluid, almost opaque, resulted. The amount of sugar present in 5 c.cm. of the latter dilution is about $\frac{1}{40}$th gr.

B. Solutions of glucose in urine diluted with sugar-free urine.

1. One c.cm. of 1 in 500 (0·2 per cent) gave a transparent deepish-blue; extract was deep blue.
2. One c.cm. of 1 in 1,000 (0·1 per cent) gave a greyish-blue fluid, the extract being a deep blue.
3. One c.cm. of 1 in 1,500 (0·06 per cent) yielded a pale greyish fluid; extract a deep opaque blue.
4. One c.cm. of 1 in 2,000 (0·05 per cent) gave a yellowish-grey fluid; the extract a distinct blue.
5. One c.cm. of 1 in 2,500 (0·04 per cent) yielded a yellowish-green liquid; the extract was a distinct blue.
6. One c.cm. of 1 in 3,000 (0·03 per cent) produced a slightly grey fluid; the extract was blue.
7. One c.cm. of 1 in 4,000 (0·025 per cent) yielded a similar fluid; the extract was blue.
8. One c.cm. of 1 in 5,000 (0·02 per cent) gave a similar fluid (perhaps a trifle less grey); the extract still was blue.

In this last case, a reaction (though feeble) was actually obtained with $\frac{1}{300}$th gr. of sugar. It would appear from the above that the reaction is more marked when the glucose is in solution in urine than when it is dissolved in water; this may be because the small traces of sugar physiologically present in urine supplement the action of that artificially added to it, or because some other normal element in urine exerts a reducing effect.

C. Reactions of lactose in varying strength in watery solution.

1. One c.cm. of 1 in 500 yielded a blue solution; chloroform extract a distinct blue.
2. One c.cm. of 1 in 1,000 gave a slight, yellowish-green fluid; the extract was a delicate blue.
3. One c.cm. of 1 in 1,500 produced a pale, yellow-green fluid; the extract had a perceptible violet tint.

4. One c.cm. of 1 in 2,000 gave a result much as in the last dilution, but perhaps a shade fainter.

5. One c.cm. of 1 in 3,000 yielded a pale straw fluid; the violet tint of the chloroform extract was barely perceptible.

From this it would appear that the recognition of milk-sugar is hardly possible with such a quantity as 1 c.cm. if weaker solutions than 1 in 1,500 are used.

D. Solution of lactose in urine.

The same general results are obtained as in the case of the watery solutions. Wherever it is suspected that milk-sugar is present, the boiling should be prolonged a little, as the reducing power of lactose is less than that of glucose.

If ordinary urine, diluted, is boiled with nitro-propiol, the liquid becomes first a turbid yellow, clearing up at length to a deep, transparent amber.

We are, I take it, entitled to conclude that ortho-nitro-phenyl-propiolic acid is a very delicate test for sugar in urine.

The next matter to which I turned my attention was to institute a series of comparative tests, contrasting the reactions with nitro-propiol with those given with Fehling's solution, yeast, and phenyl-hydrazine respectively. Aqueous solutions of grape-sugar and milk-sugar were used.

These are the results obtained:—

I. Nitro-propiol.	Five c cm. (1 in 1,500) of glucose solution gave a very distinct reaction, the fluid becoming blue and opaque. Five c.cm. (1 in 3,000) of glucose solution gave a quite distinctive reaction. Five c.cm. (1 in 1,500) of lactose solution gave a very deep blue. Five c.cm. (1 in 3,000) of lactose solution gave a very distinct blue.
II. Yeast.	Twenty-five c.cm. (1 in 1,500) of glucose solution yielded no gas in twenty-four hours. Twenty-five c.cm. (1 in 1,500) of lactose solution yielded no gas in twenty-four hours.
III. Fehling's solution.	Five c.cm. (1 in 1,500) of glucose gave a distinct reduction, the liquid becoming red and opaque. Five c.cm. (1 in 3,000) left the solution largely clear and blue, partly brown and semi-turbid. Five c.cm. (1 in 1,500) of lactose gave an opaque brown solution and a scanty reduction. Five c.cm. (1 in 3,000) yielded a fluid largely clear and blue, partly brownish and dull.

IV. Phenyl-hydrazine.
Five c.cm. (1 in 1,500) of glucose yielded a considerable number of crystals of phenyl-glucosazone.
Five c.cm. (1 in 3,000) gave a very scanty yield of small crystals, but quite distinctive.
Five c.cm. (1 in 1,500) of lactose gave no crystals of phenyl-latcosazone.
Five c.cm. (1 in 3,000)—same result.

These results show that nitro-propiol gives quite a distinctive reaction where Fehling's solution is doubtful and the yeast test fails. It is, however, not more certain or more delicate than the phenyl-hydrazine test, but can be performed very much more quickly and more easily.

III. The third and last point to be taken up was whether other substances besides glucose, which might occur in normal or morbid urines, might not have the power of acting on nitro-propiol to produce indigo-blue; in other words, whether or not the test was attended by any fallacies.

For this purpose a large number of trials were made with various kinds of pathological urine, as well as with those of patients who were taking certain drugs. Now, in the circular which is sent out with this reagent, it is stated that "the reaction is produced by glucose only," but we have already seen than lactose has a similar, though slightly less powerful, effect, and the same is true of maltose. Sulphides also possess this property, and it is well known that potassium xanthate can also reduce nitro-propiol to indigo-blue, this being one of the earlier methods advocated by Baeyer for the synthetic production of the dye. Hydrothionuria, however, or the presence of sulphuretted hydrogen in urine, is of extremely rare occurrence, so we may eliminate that source of fallacy, while potassium xanthate (or, as it should rather be termed, the ethyl-di-thio-carbonate of potassium, KC SC OC_2H_5) has never, as far as I am aware, been found in urine under any circumstances whatever. It has nothing to do with the xanthin bases, though its name would suggest this.

1. Albumen proved no hindrance to the development of the test, nor did its presence cause any fallacy. In the directions accompanying the reagent one is advised, in the case of albuminous urine, to shake up the urine, first of all, with a little chloroform to get rid of the albumen. I found that it did not signify whether the albumen were removed or not. When it was not, the chloroform extract was more dull and opaque than when it was.

2. No fallacy attended the presence of blood or of pus; of blood and albumen together; or of pus, blood, and albumen mixed. The presence of blood does not interfere with the test for sugar when the latter is present.

3. Bile, as a rule, threw no doubt on the test, but on two occasions, in the case of a patient with very marked jaundice, a quite distinct positive reaction was got, although the phenyl-hydrazine test was negative; yet the depth of colour obtained with the indigo was such as to suggest that sugar was present in an amount readily demonstrable by phenyl-hydrazine. It is, I think, probable that here we had some other substance, possibly excreted along with bile-pigment, which reduced nitro-propiol to indigo, and yet which was not sugar. On another occasion a bilious urine twice produced a deep blue colour, though it did not react at all to Fehling's solution. It seems, therefore, that the presence of bile may at times, though not always, prove a bar to perfect certainty.

4. Urates and uric acid on most occasions led to no error. Twice, however, a bluish tint was obtained, and the same uratic deposits affected Fehling's solution slightly. These salts may, therefore, at times lead to some doubt.

5. Ammoniacal decomposition of urine led to no fallacy, nor did it interfere with the test when sugar was present.

6. Acetone-containing urine did not affect the reagent.

7. The urine was tested after the administration of the following substances:—Senna, salicylate of sodium, potassium bromide, potassium iodide, mercuric chloride, arsenic, iron, quinine, strychnine, trional, chloral hydrate, alcohol, and antipyrin. On several occasions a more or less distinct indigo tint was obtained, and notably in the following instances:—

(*a*) Twice the urine of a woman who was taking ammonio-citrate of iron gave a decided blue, although the phenyl-hydrazine test was negative. This salt of iron does not itself, in pure solution, reduce nitro-propiol, so that we may suppose that something else was present here which decomposed the reagent.

(*b*) Senna once gave a slight deposit of indigo-blue.

(*c*) Potassium iodide on one occasion yielded a greenish-blue fluid, although at other times its effect was negative.

(*d*) Chloral hydrate was on one occasion slightly positive; on another, negative.

(*e*) A patient taking arsenic and mercury gave, at least, once a distinct greenish-blue coloration.

(*f*) Lastly, once in my own case I got a distinct blue, indicating an amount of sugar that should have been detected by the ordinary tests; these, however, remained negative. The same thing occurred in the case of a patient.

So that here we have a dozen instances out of, say, 200 trials where a positive result (though not always very well marked) was obtained, and yet sugar appeared to be absent.

To sum up, it seems to me that this test is subject to the same fallacies, or at least to fallacies of the same order, as those which beset all other tests where the essential change is of the nature of a reduction. As glucose is the most active reducing agent usually met with in urine, we assume that it is present when the reagent employed undergoes a prompt and free reduction. This assumption, as we all know, is not warranted unless the reduction be very marked and abundant. It is certain that from time to time other reducing agents appear in the urine (some of them little known to us), and give rise to fallacies of the kind I have indicated, and it seems to me that nitro-propiol is affected by them in precisely the same way as the copper tests are.

When absolute certainty is required in the case of quantities of sugar too small to act with the yeast test, I am convinced, by repeated experiment, that the phenyl-hydrazine test is by far the most reliable for clinical purposes.

When a copious and speedy formation of indigo-blue takes place on boiling well-diluted urine with nitro-propiol, it is almost always the case that the reduction is due to sugar, just as when a ready and abundant deposit of cuprous oxide occurs when Fehling's test is used.

The advantages which this test does possess are:—

1. The reaction when positive is striking and distinctive.
2. Little urine is required.
3. The test is very delicate.
4. The reagent is put up in a compact, dry, and convenient form.
5. It is comparatively inexpensive.

Obituary.

ARCHIBALD CAMPBELL CLARK, M.D., F.F.P.S.G.

THE medical profession in Glasgow and its neighbourhood will have heard, with general regret, of the death of Dr. Archibald Campbell Clark, who passed away at his residence, Hartwood, on the morning of 28th November.

Dr. Clark had been in failing health for over a year, his lingering illness beginning with a somewhat severe attack of influenza. Well-marked asthmatic symptoms developed, and a trip to America did not improve his condition. Pleural effusion was discovered on one side of the chest, and there was also albuminuria. His condition afterwards improved greatly, and he spent a portion of last winter travelling, chiefly in the south of England. About the beginning of summer he came home, having lost ground all round, and, thereafter, his illness progressed unfavourably, with transient periods of improvement. Dyspnœa, dyspepsia, sickness, insomnia, and, latterly, dropsy of the lower limbs and ascites, were the leading features of his illness.

Dr. Clark was born in Lochgilphead about fifty years ago. He received his early training at the parish school, but he had not the advantage of a secondary education. His father died early, but the mother's love and strength of will had an inspiring influence on her boys, for two rose to be successful medical men, and the other is flourishing in America.

In his youth he held a subordinate post in the asylum at Lochgilphead, and this, perhaps, determined his choice of lunacy work as his vocation in life.

Coming to Glasgow at an early age to push his way, he entered the warehouse of J. & W. Campbell, and there received a good business training, which stood him in good stead all his life, and no doubt contributed to those habits of punctuality, method, and order that were so characteristic of the man. Thereafter, he proceeded to Edinburgh to study medicine, and, after a successful course, graduated as bachelor of medicine in 1878, a few years later gaining the doctorate with honours.

He was an assistant medical officer at Melrose Asylum for some months, and later with Dr. Clouston, at Morningside. Thence he was promoted to be medical superintendent at Kirklands Asylum, where he laboured for about fourte[illegible] years; and, finally, he was appointed medical superintendent of Lanark District Asylum, Hartwood, which was opened in 1895. The writer had the privilege of being his first assistant at Hartwood.

Dr. Clark was Professor of Psychological Medicine in St. Mungo's College, Glasgow, and at the time of his death was President of the Caledonian Medical Society.

Hartwood Asylum is built on a piece of moorland, and immense labour was involved in its erection and in reclaiming the waste ground, and transforming the face of rude nature into a veritable garden. In addition to this, much energy was spent on organising the asylum and bringing the whole into level with modern requirements. The strain of all this work, worry and responsibility undoubtedly had an adverse influence on Dr. Clark's health, for he worked incessantly and at high pitch. Indeed, this seemed to be the normal condition of the man. Whatever he did, he did with his whole might.

Carlyle's gospel of work never received a better embodiment than in the person of the deceased. It was his ruling passion. A fortnight before he died, he actually dictated articles to the press. On his sickbed his presidential address was worked out.

Dr. Clark laid no claims to genius, but his career is a fine illustration of what a strenuous character imbued with a love of work can attain to by persevering industry. Undoubtedly, he had great abilities, but he had something more than that. His moral fibre was stronger than his intellectual one, and this moral strength gave him an ascendency over his patients, assistants, and staff, and kept them all braced up with a well-ordered discipline.

Hartwood Asylum is Dr. Clark's monument. He is buried within its grounds, and all his hopes and fears were centred there.

In his earlier career he made a careful study of the etiology, course, and treatment of puerperal insanity, and he was justly regarded as an authority on the subject.

Dr. Clark had a feeling of gratification in the fact that he was the pioneer, in this country, of inaugurating courses of instruction for asylum nurses and attendants, which have now become general all the world over, and have proved of the greatest benefit.

In 1897 his *magnum opus* appeared, under the title of *Clinical Manual of Mental Diseases*. It was well received, although some were rather upset by the startling announcement in the preface, "that the pathology of insanity has yet to be written." His book is silent on the pathology of insanity, and the fact that such terms as mania, melancholia, and dementia form the three categories under which mental diseases are classified more than justified his bold assertion.

Some years ago Dr. Clark made the curious observation that the spleens of patients dying insane were below the average size of those who died from other causes. He experimented largely, by giving a suitable extract of spleen to the patients. The results of his observations went to prove that splenic extract was a powerful stimulant, and could be usefully employed in not a few cases. Later on, he made some observations on the speech of epileptics, which were published in *Glasgow Hospital Reports.*

He was a voluminous contributor to the lay papers, particularly the *Glasgow Herald.*

Dr. Clark leaves a widow and three of a family to mourn his loss. He was cut down at the height of his manhood, and when his powers were at their best. But the influences for good he wielded, by his stainless character, by his devotion to the mentally sick and afflicted, and by the impulses he gave to those around him to hunger for fuller knowledge and better practice, will pass on from unit to unit far beyond his own lifetime.

J. T. M.

CURRENT TOPICS.

GENERAL MEDICAL COUNCIL.—Dr. Bruce, of Dingwall, has again been elected as direct representative of the practitioners of Scotland.

THE THIRTIETH ANNUAL MEETING OF THE SCOTTISH MIDLAND AND WESTERN MEDICAL ASSOCIATION was held in St. Enoch's Hotel, Glasgow, on Friday, 25th October, 1901, under the presidency of Dr. John Goff, Bothwell. There was a large attendance of members. The following were elected office-bearers for the year 1902:—*President-Elect,* Dr. Jones, Motherwell; *Vice-President,* Dr. Baxter, Hurlford; *Secretary,* Dr. Crawford, Hamilton; *Treasurer,* Dr. Livingstone Loudon, Hamilton; *Members of Council,* Dr. Service, Dr. Kirkland, Dr. Willis, Dr. Grant, Dr. Beveridge, Dr. Robertson, Dr. Arthur, Dr. Loudon, Dr. Fotheringham, Dr. Macphail, Dr. A. K. Chalmers, Dr. Goff.

The TREASURER reported that there was a balance at the credit of the Association of £241, 8s. 9d.

The PRESIDENT then delivered his address on some points of medical ethics, particularly in regard to the relation between consultants and the general practitioner, and he animadverted strongly on the practice of some specialists who annexed and treated patients without any reference to the family attendant. In this view he was strongly supported by the members present. Another point taken up had reference to the duty of colliery surgeons in regard to the working of the Workmen's Compensation Act. He advocated the view that the less the works' doctor had to do with reports to masters and insurance associations, and the less he attended court as a witness for these parties, the better for his position with the workmen. This view, after some criticism, was practically endorsed by the members present.

Some discussion took place on the matter of club payments, but any action was deferred until the committee appointed by the British Medical Association had reported the result of their labours.

A hearty vote of thanks, proposed by *Dr. Grant*, and seconded by *Dr. Baxter*, was unanimously accorded to the President for his address.

The members thereafter dined in the hotel—Dr. John Goff in the chair, and Dr. Baxter, croupier—and a very pleasant evening was spent.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1901-1902.

MEETING III.—1ST NOVEMBER, 1901.

The President, DR. W. G. DUN, *in the Chair.*

I.—FOUR CASES OF WORD-BLINDNESS.

BY DR. J. HINSHELWOOD.

The first case was that of a man, æt. 34 years, who had an attack of complete aphasia—motor and sensory. The motor and auditory aphasia rapidly passed off, but the word-blindness persisted for some time. The patient knew four languages —Greek, Latin, French, and English—and it was found that whilst the word-blindness extended to English, French, and Latin, it did not affect Greek, which the patient read fluently. Nor did the word-blindness affect in equal degree the other three languages, but was greatest with English, less with French, and least with Latin. The patient gradually recovered his power of reading, and in about three months' time all trace of the word-blindness had disappeared.

Dr. Hinshelwood thought that this case confirmed in a very high degree the views he had expressed in previous papers and in his book on *Word-Blindness*, viz., that our past visual impressions are arranged in the visual memory centre, in the left angular gyrus, in definite and ordered groups, and hence a patient, knowing several languages, may lose the visual memory of one or some only, whilst others may escape. The degree and extent of the word-blindness will depend upon whether the lesion affects the whole or only a part of the visual memory centre. In confirmation of this view, he also quoted a case from his own experience where a Frenchman, with a brain lesion, became word-deaf to French and not to English. This could be explained in the same way, viz., that in the auditory word-centre the word-memories of different languages were arranged in different groups.

The second case was that of a man, æt. 57, who became suddenly word-blind without any other cerebral symptom whatever, except a right lateral homonymous hemianopsia. The case was interesting from its singular purity, being uncomplicated by any other form of aphasia. The hemianopsia was transient, and passed off very rapidly. The patient gradually recovered his power of reading, and in three months' time all the symptoms had passed away, and the patient returned to his business.

The third case was that of a man, æt. 60 years, who had an attack of aphasia, both motor and sensory. All the symptoms passed away except word-blindness, which persisted for some time. In five months' time, however, he had recovered his power of reading completely. After being able to read for about two months, he had several epileptiform convulsions, and again became completely word- and letter-blind, and was at present in that condition.

The fourth case was that of a woman, æt. 34 years, who, after an attack of unconsciousness, was found to have right hemiplegia and complete aphasia, both motor and sensory. The hemiplegia gradually disappeared, and also the motor and auditory aphasia. The patient, however, remained at the end of fourteen months completely word- and letter-blind, not being able to recognise a single letter of the alphabet. On Dr. Hinshelwood's recommendation, she began again to learn the letters of the alphabet, and to read by first using a child's primer. After two months she is now able to read all the letters of the alphabet, and also words of one syllable, such as are met with in a child's reading book. The progress in re-educating her was thus very encouraging, and there was every reason to hope that she would yet reacquire the power of reading which she had lost by cerebral disease.

The case was one of great interest, as showing what could be done in suitable cases by persevering efforts in re-educating the patient, and thus acquiring again the visual memories of words and letters which had been blotted out by disease.

Dr. Hinshelwood also discussed in detail in his paper the pathology, prognosis, and treatment of cases of word-blindness. The paper will be published in full in the *Lancet.*

II.—THE NITRO-PROPIOL TEST FOR SUGAR IN URINE, BASED ON TWO HUNDRED OBSERVATIONS.

By Dr. Carstairs Douglas.

Dr. Douglas's paper appears as an original article at p. 17.

III.—ON A NEW METHOD OF PRESERVING MUSEUM SPECIMENS.

By Dr. Hugh Galt.

The methods at present in use for preserving gross pathological specimens are defective in many respects. The old method, by means of methylated spirit, had several drawbacks—it was costly; it caused considerable shrinkage of the specimen; while the colour was sooner or later completely lost, except in the case of pigment insoluble in alcohol.

The more recent methods, in which formalin plays an essential part, have objections of their own. Formalin does not bleach like alcohol, but it hardens the tissues and renders them brittle, while the natural colours of the specimen are gradually approximated until a uniform slaty colour results. Formalin is also very irritating to the air-passages; it acts deleteriously on the hands; it slowly evaporates; and, finally, it is occasionally unstable, even in diluted solution. Further, specimens preserved in this manner require to be covered from the light; and this must always remain a very real objection, especially when such specimens require to be frequently uncovered for demonstration purposes.

For some years I have experimented with a large number of preservative agents, which promised to be useful in overcoming some, at least, of the disadvantages attaching to those at present in use. I found that many combinations could be employed, which were superior in various respects to those at present in use, so that the question resolved itself into finding the one which gave the best results with the minimum of trouble and cost. After a long series of experiments, and prolonged actual tests in each case, I have been able to assure myself that the liquid which I have employed for preserving specimens at the Glasgow Samaritan Hospital for Women for the past two years is superior to any of those at present employed for a similar purpose. Its composition is as follows:—

Common salt, ...	5 oz.
Potassium nitrate, ...	1 „
Chloral hydrate, ...	1 „
Water, ...	100 „

This compares with the older methods thus:—

1. Cost. This is about 4d. per gallon, as compared with 2s. 6d., or more, in the alcohol or formalin methods.

2. Simplicity. It is as simple as the alcohol method, and much simpler than any of the formalin methods.

3. Action of light. This is one of its great advantages over any of the formalin methods, as specimens thus preserved are not apparently affected as to their colours, even by strong sunlight.

4. The retention of the original colours of the specimen is better than in any of the older methods.

5. It is very portable. The solid ingredients may be carried any distance, and the liquid prepared as required.

6. As the solids are non-volatile, the specimen jars require replenishing with water only.

7. It is non-poisonous and non-irritating.

8. It does not affect the cellular elements of the tissues, unlike alcohol and formalin.

9. Shrinkage is slight, and what little there is, is due to the preparatory treatment.

The preparatory treatment in this method is the same as in the old method of preservation in alcohol.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1901-1902.

MEETING II.—11TH NOVEMBER, 1901.

The President, MR. H. E. CLARK, *in the Chair.*

I.—TWO CYSTIC KIDNEYS REMOVED *POST-MORTEM* FROM A PATIENT IN WHOSE FAMILY THIS PECULIARITY HAD REPEATEDLY OCCURRED.

BY DR. J. KERR LOVE AND DR. RICHMOND (PAISLEY).

Mrs. J. was confined on 1st July, in Dr. Love's absence, by Dr. Andrew Tindal. The child was born before his arrival, and as the after-birth was expressed from above, no vaginal examination was made.

On the third or fourth day, however, the temperature rose, and although there was no abdominal distention or pain, nor any decomposition of the lochia, some septic poisoning must have taken place, for on 15th July a very large abscess on the calf of the right leg was opened.

About the middle of August Dr. Middleton saw the case with Dr. Tindal, who was again acting for Dr. Love, and in view of the continued fever, and some dulness in both lungs, along with some albuminuria, the fear was entertained that the case was one of acute tuberculosis. Much earlier than this, however (on 8th July), Dr. Love discovered that the left kidney was enormously enlarged, and before the end of July he was quite clear that the right kidney was also enlarged, but not to the same degree. By the third week of August all fever had disappeared, but there was decided œdema of both feet and commencing ascites.

About this time Dr. Richmond, of Paisley, saw the case with Dr. Love, and the remarkable family history which he gave, and which is recorded below, enabled a diagnosis of double cystic kidney to be regarded as almost certain. The subsequent history of the case from this date (23rd August) till the date of death (27th October) was one of œdema and ascites, demanding the use of Southey's tubes and repeated tapping. On one occasion 150 oz., and on another 200 oz., of fluid were removed from the abdominal cavity. Secondary changes in the heart became very marked, and dyspnœa was the most troublesome symptom. All medicines failed to give much relief to the patient. Generally there was abundant albuminuria, but sometimes the urine was quite free. No tubercle bacilli could be discovered in the urine. Death occurred on 27th October, and two days afterwards Drs. Richmond and Love were permitted to remove the kidneys.

The left kidney weighed 2 lb. 13 oz.; and right, 1½ lb.

The left, on external examination, seemed almost wholly composed of cysts containing clear fluid, and varying in size from that of a small marble to that of a tangerine orange. The right showed a much greater amount of normal kidney tissue on its exterior, but was also abundantly studded with cysts.

Dr. Richmond—The family history of Mrs. J., to which Dr. Love has just spoken, is a somewhat remarkable one.

About nine years ago I was called in to attend for the first time the mother of Mrs. J. I found her suffering from what I thought to be chronic Bright's disease, from which she recovered to a great extent, and was able to go out and visit her friends and attend to her household duties. During the next four years she had repeated attacks of the same kind, the last one being accompanied by the escape in the urine of a large amount of pus. She never had any blood in the urine. At this time I asked Dr. Newman to see her with me, and his conclusion was that there was likely to be a pyonephrosis, and in September, 1896, he cut down on the kidney from behind and found it cystic. After coming out of the chloroform she was exceedingly sick and vomited persistently, and, diarrhœa setting in, she died three days after the operation.

No *post-mortem* was made.

She was the mother of ten children. Two of them died of croup in infancy, one from chronic enteritis, and a fourth from nephritis following scarlet fever.

The oldest daughter, I was told, had one of her kidneys removed by Dr. Knox in Glasgow, as it had suppurated a few weeks after the birth of her eldest child. I learned afterwards that it was a cystic kidney, and Dr. Knox will be able to tell you about it. She is still alive and has had several children since then.

Mrs. J., whose kidneys are before you, first came under my observation eight years ago while I was attending her father. She said that she felt a swelling in her left side. As I could not make out exactly what it was, I had a consultation with a Glasgow physician, whose opinion was that it was likely to be an enlarged spleen, and as it gave her no trouble she was advised not to interfere with it.

On the death of her mother, knowing also that her eldest sister had a cystic kidney, I formed the opinion that this was likely to be the morbid condition. Dr. Newman examined her and confirmed this diagnosis. The left side only was affected at this time.

Of the remaining four members of the family, I have, within the last fortnight, examined three. The elder daughter has a large swelling in her left side, which I feel sure is also a cystic kidney. She is in the best of health, and is not aware of anything being wrong, and in the meantime it has been thought advisable not to inform her. The younger daughter is quite free from any swelling or hardness in the kidney region. The two brothers have had periodical attacks of albuminuria, but no appearance of any swelling which I could say was due to kidney has been found. It is some years since I examined the younger. Both are strong and active, playing football till quite recently, and excelling at that and other games.

Dr. Knox remembered operating on a member of the same family eleven or twelve years ago, about six weeks after a confinement.[1] She had some shivering attacks and was becoming ill, conditions suggesting septic absorption. The medical man in charge thought that there was an abscess rising out of the pelvis, but Dr. Knox had no difficulty in recognising the condition as renal. There was pus in the urine. On operation, the kidney was found to be cystic and suppurating through and through. It was removed with difficulty owing to adhesions. The patient made a good recovery, and has had several children since. Her husband, an analytical chemist, examined her urine regularly thereafter. At first there was some albumen in it, but this soon ceased to appear. Dr. Knox did not know the condition of the other kidney, except in so far that it seemed to be enlarged. This was the eldest daughter referred to by Dr. Richmond.

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[1] "Notes of a Case of Nephrectomy for Pyonephrosis," *Glasgow Medical Journal*, N.S. 35, 1891, p. 252. Reported to the Medico-Chirurgical Society by Dr. Knox.

Dr. Newman's patient was the mother of the subject from whom the kidneys shown to-night were taken. Diagnosis in her case was very difficult. The urine would be quite clear for a time, and then, more or less suddenly, "floods of pus" would appear. It was supposed to be a large pyonephrosis. As patient was critically ill, operation had to be done at once or not at all. Cystic kidney complicated by pyonephrosis was found, and the operation was abandoned. Patient died four days later. She was 60 years old and very weak. Dr. Newman also saw at the same time the patient whose kidneys were shown to-night. There were no symptoms of renal disease, but there was some enlargement of the kidneys. Dr. Newman diagnosed cystic kidneys, and advised the patient not to marry—advice which she disregarded. As to the pathology of these cases, Dr. Newman agreed with the general drift of opinion of pathologists that the condition is of congenital origin. The foundations of this view were, however, largely speculative, and he considered the pathological aspect of these cases still incomplete. Clinically, his opinion was very decided. These patients stand operation very badly as a general rule. He had operated on several, and he thought they were best let alone. He referred to a case in the Western Infirmary, where diagnosis of renal calculus was made. He operated, and found cystic kidney. She died soon afterwards. He also enquired if the liver was cystic, as is commonly the case when the kidneys are so.

Dr. Love replied that it had not been possible to ascertain that; but no enlargement of the liver was observed during life.

Professor Muir agreed with Dr. Newman that the condition was generally due to abnormality of development. Suppuration in these cases was, in his experience, rare. It was also exceptional for one kidney only to show cystic transformation. Occurrence of the condition in several members of a family had not often been recorded. He asked whether many of the cysts contained clear fluid, or whether they all contained pus.

Dr. Love replied that there were many cysts containing clear fluid; those which contained pus lay near the pelvis of the kidney.

Mr. Clark said that he also considered such cases unfavourable for operation, as both kidneys were usually involved. In removing a cystic kidney, it was not to be forgotten that usually such organs were functionally more or less active, and contained some healthy renal tissue. The least unfavourable cases for removal of a cystic kidney would be those in which there was suppuration in that organ, for you would not then be removing any functionally active tissue.

Dr. Love replied briefly.

II.—TWO CASES OF ENTERECTOMY FOR MALIGNANT TUMOUR.

By Dr. J. Crawford Renton.

1. *Excision of the cæcum and part of the ascending colon.*—J. N., æt. 48, was placed under my care by Dr. Moyes, suffering from symptoms of floating kidney on the right side. In February, 1901, the kidney was exposed and found to be floating. It was stitched up in the usual way. In May, 1901, she returned to the infirmary, complaining that the kidney had come down again. On examination, it felt as if the kidney was again displaced, but it was found to be quite fixed. There existed a movable tumour the size of a closed adult fist, and the patient complained of some obstructive symptoms, but these had not amounted to a complete obstruction. The abdomen was opened, and the tumour was found to extend for 8 inches from the ileo-cæcal valve. The tumour was removed, and the ileum, which was somewhat dilated, was attached to the divided end of the colon. It was done by two rows of continuous sutures over a Mayo Robson's bobbin. The patient progressed favourably, and has had no trouble in any way since the operation, and has a natural movement of the bowels regularly without requiring to take any medicine.

I was interested lately to observe two similar cases of the above, in which tumours of the cæcum had been mistaken for floating kidneys. I have seen a distended gall-bladder present all the symptoms of a floating kidney, and only an exploratory incision settled the point.

Dr. Ferguson reported that the tumour was a cylinder-celled epithelioma, situated on the right hand of the ileo-cæcal valve and not blocking it.

2. *Excision of a tumour in the sigmoid flexure of the colon.*—N. H. was placed under my care by Dr. Syme, of Kilmalcolm. For six months the patient had complained of recurrent attacks of obstruction, with pain and distension of the colon. A subcutaneous injection of morphia and a dose of castor oil relieved the attacks, but the patient was losing flesh. She was put under chloroform, and a rectal examination made. Being very

thin, it was impossible to explore the rectum thoroughly, and with the aid of the right hand pressing down the left iliac region, it was possible to feel a small hard tumour in the line of the bowel. It seemed movable and as if it could be drawn up by the right hand. I therefore advised operation, which was carried out four weeks ago, and so far the patient is progressing favourably.

As the sigmoid flexure had to be divided pretty low down, I made use of O'Hara's intestinal forceps and found them helpful. They are described in detail in the *Annals of Surgery* for February last. The stitching is effected by a single row of interrupted Lembert stitches over the blades of the forceps anteriorly and posteriorly. The forceps are withdrawn, and a single stitch closes the opening at which they held the divided ends of bowel.

Dr. G. Burnside Buchanan has examined the specimen microscopically, and finds it to be a carcinoma.

Dr. Renton also showed O'Hara's forceps. They enable the operator to save time considerably, which, in Dr. Renton's opinion, is a matter of the first importance in abdominal surgery.

Dr. Rutherfurd congratulated Dr. Renton on the success of his operations. He recalled a case of a similar nature, in which there was a bulky tumour involving the ileo-cæcal valve, the pain from which was referred to the region of the left kidney. The growth in this case also was cancerous, and it was excised. Three years later patient was alive and well, and working as an engineer's labourer. The case was reported in the *Transactions* of the Society for 1897, vol. vii.

Dr. Renton asked Dr. Newman whether in his experience it was common for difficulty to arise in the diagnosis of such tumours as against floating kidney.

Dr. Newman replied that he thought such a difficulty was very unusual.

III.—AN ISCHIOPAGUS TRIPUS (HUMAN), WITH SPECIAL REFERENCE TO THE STRUCTURE OF THE COMPOSITE LIMB.

BY DR. J. F. GEMMILL.

Dr. Gemmill described an ischiopagus tripus (human), with special reference to the composite limb, illustrating his description with preparations and lantern slides.

The specimen is a full-time monstrosity, weighing 7¾ lb. The composite limb is well developed and symmetrical; the other two are well formed. There is one umbilicus and umbilical cord; two alimentary canals, uniting a short distance above the cæcum; separate pleural and pericardial cavities and thoracic organs resting on a large common diaphragm, which shows at one side a hernia, containing the stomach and spleen of one twin, into its left pleural cavity. There is no true transposition of the viscera. The livers are united; there are two pairs of kidneys and ureters; two bladders receiving ureters belonging to different twins; two uteri, each of which is double; one set of almost perfectly formed external genitals; another set represented only by a fleshy eminence and the orifices of a vagina and urethra.

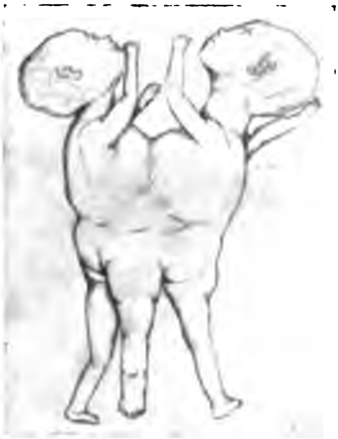


Fig. 1.

Sketch of the monstrosity, as seen from the side which carries the composite limb. The foot has ten digits and is looked at from its dorsal aspect.

The sterna are united inferiorly. There is one large composite pelvis with two symphyses situated on opposite sides of the ring; one pair of normal lower limbs, consisting of the right limb of one twin and the left of the other. The composite limb represents the other two united.

The bones of the composite limb are femur, tibia, astragalus, scaphoid, internal cuneiform, first metatarsal, all single composite pieces; fibula, calcaneum, cuboid, &c., in a double set.

The main arteries of the composite limb are derived from the sciatic arteries, which are enlarged and unite at the back of the knee-joint; the internal popliteal nerves also unite at the back of the knee-joint. There is an almost completely double set of muscles.

Points of general teratological interest:—

1. The limb has developed as a composite structure, and is not the result of secondary fusion.

2. The connective tissue group of structures (bones, ligaments, tendons, sheaths of nerves and vessels) show the united or composite condition most readily. This relates itself to the diffuse peripheral origin of mesenchymal tissue in the embryo.

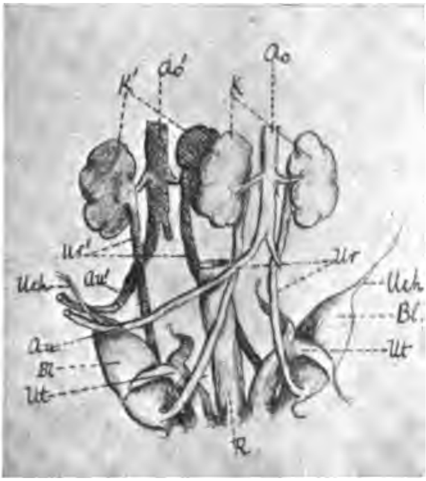


FIG. 2.

SKETCH OF PELVIC ORGANS OF THE MONSTROSITY.

K.	The pair of kidneys	belonging to one of the twins.
Ur.	The pair of ureters	
Ao.	The aorta	
Au.	The umbilical artery	
R.	The common rectum.	
Bl. Bl.	The urinary bladders.	
Uch. Uch.	Urachus of each bladder.	
Ut. Ut.	The two uteri.	

It will be noted that each of the bladders receive a ureter from either twin.

3. In contrast, composite muscles are extremely rare in the limb. This probably relates itself to the definite origin of the limb—muscular tissue from mesoblastic somites.

4. In various parts of this monstrosity (pelvis, liver, composite limb), where overlapping of individualities may be said to have taken place in development, conditions are

present which may be explained as compromises or resultants of similar forces acting in different directions.

5. In various parts of the composite limb, and particularly in the foot, conditions are present which point to an attempt in development to go beyond simple compromise, and by forming new connections and even new structures to adapt the composite limb for possible use.

6. In this monstrosity, as in all similar ones, union when present is of homologous structures, and all the paired structures in the composite region consist of a right element derived from one embryo, and a left element derived from the other.

A full description (with plates) of the monstrosity will appear in the *Journal of Anatomy.*

The *President*, on behalf of the Society, thanked Dr. Gemmill for his extremely interesting and well carried out demonstration.

IV.—SPECIMEN OF A COMBINED URETHRAL AND VESICAL CALCULUS.

By Mr. A. E. Maylard.

Abstract of Report by Dr. D. Russell.—R S., æt. 23, was admitted to the Victoria Infirmary, complaining of frequent and painful micturition.

History.—Patient states that he was quite well up till a year previous to admission, when he began to feel the inclination to pass water much oftener than usual. When he went to do so, however, he often found that the urine would not come. When he did pass urine he immediately felt pain at the point of the penis. He stated that at times he had lain for five hours trying to relieve his bladder. For some weeks these symptoms were very troublesome, patient having to rise from the table, &c. Then followed a period during which there was slight improvement.

He was admitted to a provincial hospital, where he remained six months. Here he was treated medically, nothing locally being tried. When he left the institution he was slightly improved, for he could retain his urine an hour and a half, which he could not do previous to his admission.

The pain complained of was felt at the point of the penis, immediately after micturition. It lasted, as a rule, for ten minutes or more. He felt most at ease walking about, but he had to do this very slowly, as any jolting caused him pain in the region of the bladder.

He felt pain nowhere else, unless on one day, three or four days before admission, when he felt it severely in his left side.

The stream, when started, was always fairly full, but was usually preceded by a few drops of urine which, patient says, were turbid in appearance. He never noticed this in the last drops passed. The urine was normal to look at, unless for occasional cloudiness. No blood was ever noticed by patient.

Once or twice during the last few weeks previous to his admission the urine kept dribbling away from the urethra involuntarily, and during the last week he experienced little or no difficulty in starting the stream, but the pain and frequency remained.

On admission patient passed urine four times in as many hours, and during the examination he required to pass it. The stream came freely, but evidently with some straining. The pain seemed to come on as the last few drops of urine were passing, patient straining hard, and, according to himself, involuntarily.

The urine was amber coloured, and seemed slightly turbid on passing. It was alkaline, with a heavy deposit of mucus and pus; slight trace of albumen; no blood; no sugar. Microscopically, abundant pus corpuscles were seen, as well as numerous triple phosphate crystals.

Under A.C.E., Mr. Maylard passed a sound into the urethra, and hit an obstructing stone in the membranous portion. The stone could be felt in the perineum, from outside, against the end of the instrument. A large silver catheter was inserted, and cut down upon through the perineum. A large rough stone was removed with forceps, and with it came offensive pus and urine. The stone occupied a spacious pouch in the urethra, and beyond this was seen another stone, which slipped back into the bladder, and was removed by stone forceps. It was found to be of dumb-bell shape, the constriction marking where the neck of bladder has been round it in its formation. The distal end of this stone was smoothly convex, fitting into a smooth concavity on the proximal end of the first removed stone. A remaining small stone was removed from the bladder, which was then washed out through the wound.

Patient made an excellent recovery, and was dismissed three weeks later perfectly well.

V.—SPECIMENS OF RENAL CALCULUS.

By Mr. A. E. Maylard.

Abstract of Report by Dr. D. Russell.—D. C., æt. 24, male, was admitted to the Victoria Infirmary, complaining of pain in the back on the left side.

History.—Patient stated that the pain first began when he was aged 8 or 9 years. It was felt on the left side below the ribs, close to the spine. The pain was habitually sudden in onset, lasting usually for about half a minute, and followed by a free interval of two or three minutes. It occasionally passed through to the front, but was never felt in the right side. Bending the body forwards, or putting the left knee to the chin, eased the pain. Sickness or vomiting never accompanied these attacks. On one occasion, three months previous to admission to hospital, he had a very severe attack, lasting three hours, which was only relieved by the injection of morphia.

Patient had never any difficulty in passing urine. For two or three years previous to admission he had pain in the left side (of the same character as above mentioned) immediately before the act. He never noticed any frequency, nor any increase in the amount of urine passed.

About one year after the pain was first felt, *i.e.*, about ten years previous, he noticed blood in his urine. This recurred at wide intervals. He last noticed it two years past, and on this occasion the blood was red and fluid—no clots—and it came away from start to finish of the act. He never felt pain in the urethra at any time, nor did he notice any sediment in the urine suggestive of pus.

There never was any tenderness or swelling in the situation of the pain, and at no time was he fevered. He had no profuse sweating apart from exertion.

For a few years patient had occasionally passed blood *per rectum.* The bowels were regular.

The patient had consulted a great number of doctors, who all gave different diagnoses and treatment. He last attended Dr. A. Vost, of Alva, who diagnosed renal calculus, and advised his admission to the Victoria Infirmary.

On admission, examination of the patient's abdomen gave no objective information. No tumour was felt, nor could the kidneys be palpated. The spine seemed straight, and pressure in the left loin was painful.

Urine was amber coloured, acid, with a deposit of mucus.

There was a slight trace of albumen present, but no blood or sugar. No pus corpuscles were seen microscopically.

Under A.C.E., Mr. Maylard made an oblique incision in the left loin behind, when the kidney was exposed by reflecting the peritoneum forwards. The viscus was freely palpated both in front and behind, but nothing was detected. A knife was then thrust into the convex border of the organ, and at once a distinct click was heard. The incision was enlarged, and, by means of dressing forceps, numerous stones were extracted—one about size of a filbert, black and tuberculated on the surface. A smaller one was quite spiny on the surface, while another was round and smooth like a pea. Several quite small calculi and fragments were also extracted. Three drainage-tubes were inserted, one being placed in the wound in the kidney.

A few hours later the wound was dressed; there was considerable bleeding; the tubes came out and were not replaced. Iodoform gauze was lightly laid into the wound.

Patient made an uninterrupted recovery, and on 26th September, when last heard of, was keeping perfectly well.

Mr. Maylard also showed as a card specimen thirty-one loose bodies removed from a single knee-joint.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Session 1901-1902.

Meeting II.—27th November, 1901.

The President, Dr. Robert Jardine, *in the Chair.*

I.—FRESH SPECIMEN.

By Dr. J. M. Munro Kerr.

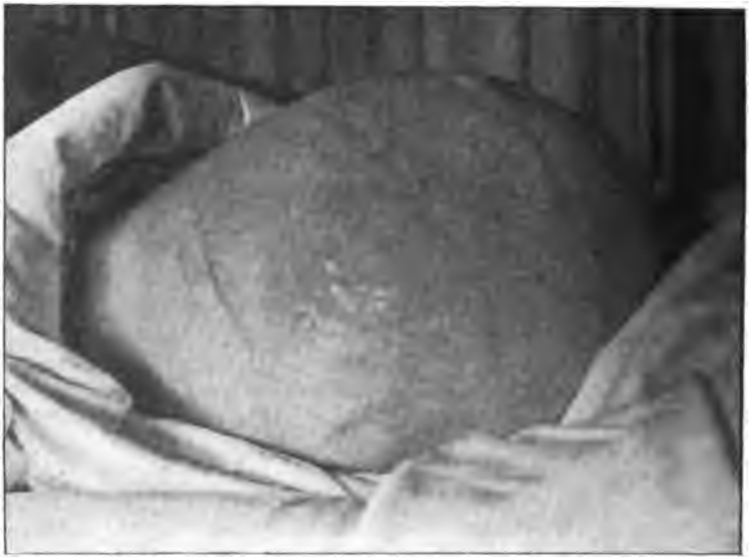
Uterus removed by vaginal hysterectomy for malignant polypus of corpus uteri.—The patient, aged 48, had suffered from metrorrhagia for nine months. The cervix was dilated and the uterus digitally explored, when a hazel-nut-sized polypus with a broad base was detected attached near the fundus. A portion was removed by the curette and examined by Dr. Teacher, who declared the growth to be carcinomatous.

II.—CASE OF OVARIOTOMY FOR LARGE CYSTOMA.

By Dr. H. C. Donald (Paisley).

Mrs. M., aged 26, admitted to Paisley Infirmary on 10th December, 1900, suffering from a swelling of abdomen of five weeks' duration—*i.e.*, since her first confinement, when she was delivered of a live male child (full time, but small).

She first menstruated at 14; continued regular until beginning of her pregnancy. During the pregnancy she lost flesh, and the swelling was very great, but nothing was remarked during this time as unusual. After delivery there was little difference in the abdominal distension, and during the five weeks before admission patient became very anæmic and wasted, and the abdominal distension increased, so that, on admission, she was very pale, emaciation was extreme, and the slightest movement gave rise to urgent dyspnœa. Abdominal distension was great; measurement from umbilicus to xiphisternum, 9½ inches; umbilicus to pubis, 9½ inches; and from umbilicus to either iliac spine, 10½ inches. All over the swelling fluctuation was very readily obtained; percussion note dull. There was a narrow zone in the extreme flanks,



and round into epigastrium, where the note was tympanitic. Hepatic dulness quite obliterated. Apical impulse in third interspace, half an inch inside left nipple. Pulse, 100; respirations, 20; temperature, 100·6°.

10th February, 1901.—Since admission the general health of this patient has steadily improved. Anæmia is less; patient has put on flesh; dyspnœa is not so readily produced; and temperature, which at first ranged from 99° to 102°, has gradually settled down, and has now been normal for a week. The abdominal distension has steadily increased—during the last four weeks there has been an increase of 4½ inches in the circumferential measurement at umbilicus (from 36 inches to 40½ inches). Operative interference decided on.

15th February, 1901.—Operation, 10 A.M. Incision in median line. Thin-walled cyst (very friable), with many and dense adhesions to surrounding structures, bladder, bowel, parietes, &c. Fully twenty-six pints brownish coloured fluid drawn (excluding quantity lost). Adhesions with difficulty separated, pedicle ligatured, cyst removed, glass tube passed down to Douglas' pouch, and wound closed.

Patient rallied well from chloroform. There was slight retching during the afternoon; this soon passed off, and recovery was uninterrupted.

During afternoon and evening of day of operation (15th), 4 oz. 2½ drs. of almost pure blood was drawn off by catheter from glass tube; on the 16th, 5½ oz.; on 17th, 3½ oz.; on the 18th, 7¼ oz. of straw-coloured fluid; on 19th, 6 drs.; and on the 20th only 2 drs., when the tube was removed and wound closed. Healed by first intention.

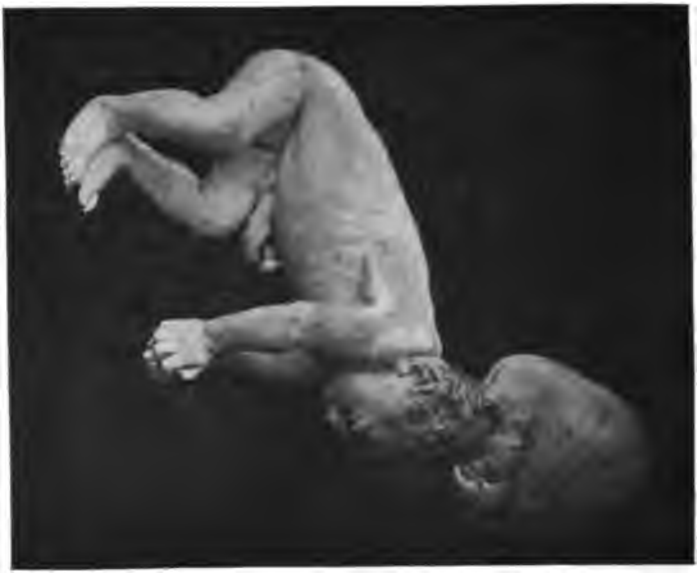
Dismissed well on 13th April, 1901.

III.—REPORT ON DR. A. W. RUSSELL'S SPECIMEN OF POSTERIOR ENCEPHALO-MENINGOCELE.

By Dr. John H. Teacher.

The subject of this malformation is a large human fœtus, which is well formed except about the head. There is a very large sac, bigger than the head itself, rising from the occipital region and hanging down on the back. The cranium in front of the protrusion is well formed, but it appears small in proportion to the face and body of the fœtus, and the forehead slopes sharply back above the eyes, like in a case of hemicrania. The neck is well formed, and there seems to be an occiput behind the protrusion, even on external inspection.

On dissection, the cranial vault is found to consist of well-formed frontal and two parietal bones, the posterior fontanelle, occupied by the neck of the protrusion, and a well-formed occipital bone. The sac is covered partly with scalp, partly with parchment-like membrane. The greater part of its bulk consisted of very œdematous connective tissue, which seemed to be continuous in part with the dura mater, but no dura mater could be recognised in the sac. The inner sac of pia mater was recognisable as such; it closely enveloped a very large mass of brain tissue, divided into three main lobes and a small one; they are all cerebrum. The protrusion is, therefore, an encephalocele. It is connected with the part of the brain within the cranium by a narrow isthmus of cerebral tissue and membranes; it appears to represent the occipital lobes, and in actual bulk it is larger than the normally situated part, but then it is very soft and highly œdematous.



Owing to the softness of the brain tissue it was impossible to dissect it further, and the preparation as now mounted shows only the external appearances. It is catalogued as No. 50.99A in the Pathological Collection in the Hunterian Museum.

IV.—REPORT ON DR. A. W. RUSSELL'S CASE OF HYDRAMNIOS IN TWIN PREGNANCY.

BY DR. JOHN H. TEACHER.

The twins were born in the sixth month, the one being born alive, while the other had been dead for some days. They were both well formed. They were enclosed in a common chorion. The amnion of the live-born twin seemed to be perfectly normal, but that of the other showed very marked hydrops. The placenta was of oblong shape, but not distinctly double. On its outer surface, a deep groove divided it transversely into two approximately equal parts. The two cords were attached about the centres of the two parts, and, from the distribution of the blood-vessels, the one part belonged to the live-born twin, the other to the dead-born twin. The naked eye characteristics of the placental tissues agreed with this, that of the half belonging to the live-born being firm, fleshy, and covered by a layer of decidua, whereas that of the dead-born was broken into lobules to an abnormal extent, frayed out in parts, had a very imperfect covering of decidua, and was brittle and stripped away easily from the chorionic membrane.

The blood-vessels of the two fœtuses mutually overlap, passing across the border on the inner surface of the organ, but no evidence of anastomosis could be obtained, either by dissection or microscopically. In spite of the naked eye difference between the two divisions of the placenta, microscopic examination of sections from several portions failed to reveal any difference between that of the live-born and that of the dead-born. The villi were just as perfectly preserved and functionally active-looking in the one as in the other. Naturally, there were plenty of decadent villi, but they were as numerous in the one part as in the other. The good preservation of the placenta of the dead-born is doubtless due to its connection with the uterus. Even the absence of a proper layer of decidua seems not to have made any difference. Here, then, there was no light on the question why one fœtus should have suffered from hydramnios and the other not.

The cord of the dead-born twin was much thicker than that of the live-born—a condition distinctly due to œdema. The amnion of the dead-born also was œdematous, but no difference was to be made out between the epithelium of it and that of the amnion of the live-born. There were neither knots nor twists in the cord of the dead-born; in sections it showed the same signs of having been dead some time as did the tissues of the fœtus. Dissection showed that there was no obstruction to the circulation so far as the cord and liver were concerned, but the condition of the valves of the heart could not be made out owing to its being full of firm blood-clot. The ventricles were contracted and almost empty of blood; the auricles were distended with it and the venous system engorged, as if the fœtus had died in a state of asphyxia.

Histological investigation was useless, as it was impossible to tell what was due to disease and what to *post-mortem* changes. Cloudy swelling appeared to be present in the liver and kidneys, but no significance can be attached to that, and there was nothing else except the venous engorgement which could be fixed on as abnormal. Sections of heart, liver, lung, kidney, and skin were examined. The skin appeared not to be œdematous. The tissues of the live-born were examined as control.

The pathology of hydramnios is an extremely difficult and unsatisfactory subject. This case contributes nothing but negative evidence, which, however, may have some small value. At least, it does not conflict with the commonly accepted idea that hydramnios is a sign of fœtal ill-health rather than of disease in the fœtal appendages or mother.

V.—FATAL CASE OF PUERPERAL SEPTICÆMIA FROM DOUBLE PYOSALPINX.

By Dr. Robert Jardine.

Mrs. M'N., æt. 20, ii-para, admitted 4th June, and delivered the same day by forceps, as the second stage was somewhat prolonged. The first and second stages lasted twenty-four hours. The perineum was partially torn, and required three sutures. The child, a male, alive, weighed 7½ lb.

The patient showed an unusual amount of pigmentation of the face. A number of coppery scars were noticed about the buttocks, and she gave a history of ulcers two years ago. Syphilis was strongly suspected.

On the third day of the puerperium the temperature, which had until then been normal, rose to 101°, and the pulse to 130. The bowels had been thoroughly cleared out. On the fourth day, the temperature rose to 102°. An intra-uterine douche was given, but everything seemed perfectly sweet. Quinine (10 grs.) was given. On the fifth day the temperature fell to 100° in the morning, but rose to 102° in the evening. An intra-uterine douche was again given, but nothing was washed out. The abdomen was now distended and painful. As there had been persistent diarrhœa for the last three days, we suspected enteric. There were no rose spots, enlarged spleen, nor epistaxis. The blood gave a doubtful Widal reaction. A second specimen taken two days later gave a decided negative reaction. The severe diarrhœa persisted. The temperature varied between 100° and 102·6°, and the pulse from 100 to 130. The pulse grew gradually weaker, and the patient died on the ninth day. Just before death, the temperature ran up to 104°.

The cause of death had evidently been septic peritonitis. The source of infection I felt pretty confident would not be found in the vagina or uterus. The lochia had remained sweet, and the perineum had healed fairly well. No pelvic swelling could be made out *per vaginam*, and the distension of the abdomen prevented anything being felt bimanually. The *post-mortem* examination fortunately enabled us to verify our conclusions.

The following is Dr. Douglas' report:—

"Tall, well-nourished woman, of dark complexion. Presence of diffuse macular coppery eruption; rigor mortis gone from arms, still present in legs.

"Abdomen much distended and somewhat discoloured. On opening, a quantity of thick, opaque, sanguineous fluid escaped, carrying numerous flakes of curdy pus with it. This came from the lower part of the abdomen, chiefly from the right side. A considerable amount was removed, and the parts examined. The appendix was found fairly healthy, save for some old adhesions; the bowels generally were distended, injected, and slightly glued together. The right Fallopian tube was swollen, injected, and a quantity of purulent necrotic material was found at the ostium. The ovary was soft and gelatinous, and came away easily; it seemed to have formed the posterior wall of a large pyosalpinx. The left tube and ovary were in exactly the same state. The interior of the uterus was healthy."

There is no doubt that this was a case of old double pyosalpinx. These abscesses were certainly not of recent formation. If they were both present before impregnation, the question is—How did the ovum find its way down into the uterus?

Would abdominal section have done any good here? I certainly would have tried it if we had been able to exclude enteric at once; but, unfortunately, the first examination gave an uncertain reaction, and by the time we got the second report the patient was dead. An early operation might have saved her.

Some months previous I had seen an almost identical case in consultation in the country. The child had been born before the doctor's arrival, and there had been no vaginal examination. The house was a good one, and the nurse was competent. Profuse diarrhœa set in, with a rise of temperature. There was no palpable tumour, but there was some tenderness at the side of the uterus. I at once suggested to the doctor that I thought the source of infection was from the tube, and he then told me that he had treated the husband for gonorrhœa two years before. The Widal reaction was negative. She improved for a little, but died about ten days later. If she had been in hospital I would have opened the abdomen, but under the circumstances it was impossible to do so.

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A knowledge of this case enabled me to conclude that in the case just reported we would find the source of infection in the tube. Such cases are exceedingly rare; but, in dealing with puerperal septicæmia, one must bear in mind that the source of infection is not always to be found in the vagina or uterus.

I have already reported two unusual cases—one in which a poisoned finger was the source, and the other where there was gonorrhœal rheumatism, with pus in the knee-joint.[1] I would like to add a further note about this latter case. I have recently seen the child. It has now marked congenital syphilis. There is no doubt that we there had to deal with mixed infection with a vengeance. In the case I have just reported syphilis was also present.

VI.—NOTES OF CASES OF ABDOMINAL SECTION ILLUSTRATING POINTS OF INTEREST.

By Dr. J. Crawford Renton.

Five cases of gangrenous ovarian cysts—Operation in four —Recovery in all.

Case I.—A. B., æt. 18, was sent to me by Dr. Syme, of Kilmalcolm, with an abdominal swelling, and with a history of two attacks of peritonitis of a mild type, the highest temperature being 101°. On examination, the patient complained of abdominal tenderness, both on the right and left side, and the abdominal swelling was distinct but not excessive, the appearance indicating abont a six months' pregnancy. The symptoms pointed to an ovarian cyst, with recurrent attacks of peritonitis. Dr. Syme kindly came to the operation, and on opening the abdomen, assisted by Dr. Beatson and Dr. Guthrie, found an ovarian cyst on the left side, with three twists on the pedicle from right to left, the cyst being gangrenous and the pedicle by no means a long one. This we removed in the ordinary way, tying the pedicle with a silk ligature, pure carbolic acid being applied to the stump.

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[1] *Glasgow Medical Journal*, June, 1901, p. 442.

On examining for the right ovary we did not find it easily, but after some search we found a gangrenous cyst adherent under the liver, with a long pedicle with one twist on it; this we removed. The patient did well without any bad symptom.

CASE II.—A. L., æt. 25, I saw along with Dr. Sewell, of Helensburgh, with the history that she had had a pretty sharp attack of peritonitis, temperature 101°, with abdominal swelling equal to an eight months' pregnancy. As the symptoms were somewhat serious, I recommended operation without delay, and in this Dr. Sewell agreed. On opening the abdomen, the peritoneum was found closely adherent to the cyst, which was gangrenous, and there were three half turns from right to left in the pedicle. These were unwound, and the cyst removed, the pedicle being tied with silk, and pure carbolic acid being applied to the stump, as in the former case. The other ovary was cystic, and was removed, there being no twist on its pedicle. The patient did well.

CASE III.—C. D., æt. 32, was placed under my care by Dr. Martyn, of Airdrie, with a history of abdominal pain, and temperature, and on the left side, *per vaginam*, a distinct swelling could be felt, about the size of a small cocoanut. Abdominal section was recommended, and a gangrenous cyst of the size indicated was, with difficulty, enucleated out of the pelvis. The condition in this case was not due to a twisted pedicle, but what appeared to be a thrombus in the pedicle. The pedicle was tied with celluloid thread, and pure carbolic acid applied to the stump. The other ovary was cystic, and was removed. The patient was much collapsed after the operation, but gradually rallied and did well.

CASE IV.—E. F., æt. 35, was sent to the Western Infirmary by Dr. Roxburgh, of Troon, with an abdominal swelling, and a history of attacks of pain. On opening the abdomen, a gangrenous cyst filled the abdominal cavity, with three half turns on the pedicle from right to left; these were unwound, and the pedicle tied with celluloid thread, carbolic acid being applied to the stump. The other ovary was cystic, and was removed. As there was considerable oozing from the peritoneum in this case, a glass drainage-tube was inserted for forty-eight hours. The patient progressed favourably.

Case V.—C. G., æt. 67, came under my care with all the symptoms of an ovarian cyst, and a temperature of 101·5°, with tenderness over the abdomen. The late Dr. Thomas Keith saw her along with me, and recommended tapping, which was carried out by means of an aspirator, Professor M'Call Anderson being present along with Dr. Keith and myself. From the appearance of the fluid, Dr. Keith was satisfied that we had to deal with a gangrenous cyst with a twisted pedicle, and he advised delay as to any operation. The patient passed through an illness of subacute septicæmia, the knee-joints being principally affected, and gradually recovered, and to-day she is quite well, and has had no bad results from the attack.

Remarks.—What causes twisted pedicle? In some cases we may blame the length of the pedicle and simple abdominal movements, when the cyst is small, causing rotation of the cyst; but in Dr. Sewell's case and Dr. Syme's case, although twisted, both pedicles were comparatively short, and I cannot in these cases blame the length of the pedicle. I would like an expression of opinion as to the cause of this twisting of the pedicle.

In Dr. Martyn's case the thrombosis which existed might be accounted for by the fact that the patient was asthmatic, and her cardiac condition was not quite satisfactory.

As regards the fifth case, it was to me very instructive, as, personally, I was anxious that an operation should be performed owing to the serious condition of the patient; but it illustrates the value of an experienced opinion like that of Dr. Thomas Keith, who advised delay, and the fight with a subacute septicæmic condition from which the patient recovered. I rather think that to-day we would have advised operation; at the same time it is well to weigh carefully the balance of evidence for and against interference. In none of the cases was there any collapsed attacks as if from hæmorrhage into the cysts, as mentioned by Kelly. The twistings of the pedicles coincides with Kelly's experience as being on the left side from right to left, and *vice versa* on the right side.

The next two cases I mention as illustrating the value of interference in prolapse of the pelvic organs.

CASE I.—E. H., æt. 45, was sent to me by Dr. Oliver. In her case the uterus, bladder, and anterior portion of the rectum were prolapsed, and her misery was great. I advised ventrofixation of the uterus, and in this Dr. Oliver agreed. We opened the abdomen and drew the uterus well up into the abdominal wound, taking care that it was sufficiently near the umbilicus to insure that bladder distension would be quite satisfactory after the fixation. The peritoneum was pushed one inch and a half below the fundus of the uterus, and then two stitches of chromic gut were carried through the aponeurosis, the rectus muscle, the uterus, avoiding tubes, the rectus muscle of the opposite side, and the aponeurosis, and tied. Superficial stitches were then passed. It is now two years since this patient was operated on, and she continues to be quite well.

CASE II.—D. E., æt. 32, was placed under my care by Dr. Garnett Wilson, with prolapse of the uterus and bladder. The same operation, as above described, was carried out in this case, and the result has been equally satisfactory.

Remarks.—I have no doubt that such cases are familiar to you all, but the two points upon which I would like information are:—

1. Do the members approve of the method I have indicated as regards the peritoneum and fixation of the uterus?

2. What is your experience with reference to the position of the fundus of the uterus? I feel strongly that the fundus should be brought up to an inch below the umbilicus, so as to allow plenty of room for the bladder, as I have seen cases where it seemed to me that the irritability of the bladder continuing after the operation was caused by the uterus being fixed somewhat low down. On this point Kelly remarks that it does not matter how low it is fixed, as the bladder adapts itself to the circumstances and assumes the position of saddlebags. At the same time, we must bear in mind that these fixations do not continue close to the abdominal wall,

but gradually are only supported by strings of adhesions. Cases of pregnancy after such operations are on record.

I should like it to be clearly understood that it is only in bad cases that I would advise ventrofixation, as the effects of closure of ruptured perineum is sufficient in nearly every case to secure the pelvic organs in good position.

Dr. W. L. Reid regarded Trendelenburg's position as most useful, as it enabled an operator to deal better with adherent tumours, which would otherwise be very difficult. He did not think it necessary to fix the uterus so high up in the abdomen as Dr. Renton mentioned. He preferred Howard Kelly's method, and had experienced no after-trouble with the bladder. He performed ventrofixation after freeing an adherent uterus.

Dr. Munro Kerr had met with two cases of twisted pedicle out of fifteen ovariotomies. He considered that torsion of the pedicle should be diagnosed before operation. As regards cases of prolapsus uteri, he had done ventrofixation in two cases and preferred Herman's method, but the main point was to fix the uterus as low down as possible in the abdomen. It was also very important to repair the perineum at the same time.

Dr. Balfour Marshall said that the results of colpoperinorrhaphy for prolapsus uteri were often disappointing, cases returning months after operation with a recurrence, sometimes showing a partial prolapse, while in other instances they were as bad as if no operation had been performed. No case, however successful the operation might seem at the time, could be regarded as cured unless we followed the after-histories, and found no return, say, a year after. It was of great importance in these cases to narrow the vagina sufficiently when repairing the perineum and pelvic floor. The method he adopted was that of carrying the denuded areas in each posterior vaginal sulcus well up to the fornices. The vagina, at the completion of the operation, should only admit the forefinger, since, after the stitches were removed, there remained a canal of nulliparous size. In severe cases, a ventrofixation should be done as well. He adopted Howard Kelly's method, stitching the posterior aspect of the fundus uteri with strong catgut low down to the anterior abdominal wall. This allowed of some mobility of the uterus, and he considered it preferable to Herman's method, where the adhesions might be so firm as to complicate a possible future pregnancy. He had not met with any after bladder trouble in his cases. A ventrofixation should always be accompanied by repair of the perineum and pelvic floor. We should regard prolapsus uteri as a hernia, and treat it as such by repairing the supporting structures of the pelvic floor. He referred to one case of ventrofixation for complete prolapse without a colpoperinorrhaphy being done, where the uterine adhesions gradually stretched, and the prolapse became as complete as before. He considered it quite unjustifiable to perform total hysterectomy for prolapse, especially in women capable of bearing children, as the combined operations of colpoperinorrhaphy and ventrofixation were generally successful, and should at all events be tried first.

Dr. Renton replied, and said he would prefer to try ventrofixation for prolapse before proceeding to hysterectomy, and would only do Herman's method where pregnancy was not likely to occur.

VII.—THE OCCURRENCE OF MILK-SUGAR IN THE URINE OF NURSING WOMEN, WITH A NOTE ON THE BEST MEANS FOR ITS DIFFERENTIATION FROM GRAPE-SUGAR.

By Dr. Carstairs Douglas.

During the past few years it has happened that on several occasions I have been asked to examine the urines of nursing women, and to determine whether the reduction of Fehling's solution which these occasioned was due to grape- or to milk-sugar. For it is obviously a very different matter, alike as regards diagnosis, prognosis, and treatment, if the sugar that is present is the harmless lactose and not the more serious glucose. A surgeon or gynæcologist about to operate, who finds that his patient's urine contains sugar, will naturally feel much relieved if his mind can be set at rest upon this point; and the physician, under similar circumstances, will take a totally different line in his dietetic and medicinal treatment, according to the class to which the foreign element belongs.

I have accordingly given this matter some attention during this year, and have made a series of observations on patients in the Glasgow Maternity Hospital, partly to determine whether lactosuria were really common among nursing women, and partly to ascertain whether there were any reliable tests which would enable one to determine positively between grape- and milk-sugar in urine.

This is not a new matter, for the occurrence of milk-sugar in the urine of mothers has been noted for a good many years past. One of the earliest papers on this subject is that of De Sinéty, in Maly's *Jahrbericht für Thierchemie* for 1874, and since then communications have appeared from time to time by Hemper,[1] Hofmeister,[2] Johannovsky,[3] Kaltenbach,[4] Ney,[5] and others. But when a matter of this kind crops up, and one is asked to give an opinion upon it, it is always a great advantage if that opinion can be based on personal observation, and, accordingly, what I now wish to communicate to you briefly is what I myself found to be the case.

I. The number of cases examined was 56, and on these I made ninety-one observations; most of the cases were primiparæ. Of the 56, 48 (or 85 per cent) showed the presence of milk-sugar in the urine in greater or less degree, while it was not found in 8 cases (or 15 per cent). But when these 8 cases are looked into a little more closely, it is found that 2 of them were pregnant women (sixth and eighth month respectively), while 3 of them were mothers who never nursed at all. Of the remaining 3, 1 (a ii-para) was examined only once, and on the first day of the puerperium, so that there remain only 2 cases (or 3·5 per cent of the total) where lactosuria did not occur after full lactation had been established. We may, therefore, conclude that nursing mothers usually secrete a urine, at least in the later days of the puerperium, in which milk-sugar occurs in greater or less amount.

Of the cases examined in hospital, most of the observations were made between the third and seventh day after delivery.

Of 4 undelivered cases, 2 revealed no sugar (sixth and eighth month respectively), while 2 at full time showed traces.

In at least 1 case, a v-para, sugar was found on four different occasions, though the woman was not nursing; and it was also found, where a woman had been nursing and lactosuria was present, that when suckling was stopped (*e.g.*, on account of the child's death) the urine might show evidence of milk-sugar for four or five days more, the quantity, however, always growing steadily less. This is, I think, a point of some importance, for women not unfrequently come into a general hospital for, let us say, some surgical purpose, leaving their babies at home, and their urine, for several days after admission, is found to contain sugar. This might be puzzling, and the prognosis accorded the patient more serious, did we not bear in mind the fact that after such a person has ceased to nurse, milk-sugar will present itself in the urine for some time. We may, therefore, say that, at least in the early days of nursing and after full lactation has been established, the majority of mothers exhibit lactosuria, and secrete a urine that readily reduces Fehling's solution.

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[1] A. Hempel, "Die Glycosurie im Wochenbette," *Arch. f. Gynæk.*, Bd. viii, 1875, S. 312.

[2] F. Hofmeister, "Ueber Lactosurie," *Zeitschr. f. physiol. Chemie*, Bd. i, 1877, S. 101.

[3] V. Johannovsky, "Ueber der Zuckergehalt im Harne der Wöchnerinnen," *Arch. f. Gynæk.*, Bd. xii, 1877, S. 448.

[4] P. Kaltenbach, "Ueber Lactosurie der Wöchnerinnen," *Zeitschr. f. physiol. Chemie*, Bd. ii, 1877, S. 360.

[5] J. Ney, "Ueber das Vorkommen von Zucker im Harne der Schwangeren, Gebärenden, und Wöchnerinnen," *Arch. f. Gynæk.*, Bd. xxxv, 1889, S. 239.

There is still another circumstance in which this should be kept in mind, and that is when, on examining a female applicant for life assurance, we find sugar in the urine. It is obvious that a great injustice would be done to the proposer if she were rejected or the premium loaded, simply because the examiner had not taken the pains to find out whether or not she was nursing at the time.

II. *The tests for lactose in urine.*—Lactose or milk-sugar has the formula $C_{12}H_{22}O_{11}$, and is one of the group termed "disaccharides" by physiological chemists, because it is formed, as it were, by the combination of *two* molecules of glucose less one molecule of water, thus—

$$2C_6H_{12}O_6 = C_{12}H_{22}O_{11} + H_2O.$$

If one take, say, a 1 per cent solution of milk-sugar in water, it will be found that it reacts quite well to Fehling's or Trommer's tests, though it may need a little more prolonged boiling than in the case of grape-sugar, as the reducing power of the former to the latter is only as 7 in 10. Milk-sugar also reacts well with nitro-propiol (ortho-nitro-phenyl-propiolic acid), a recently proposed test for sugar in urine which I have looked into pretty fully, and on which I recently communicated a paper[1] to the Glasgow Medico-Chirurgical Society based on over two hundred observations. By these methods, we can easily show that sugar is present. When the examinations are made during the puerperium, and catheter specimens are not available, the presence of blood, epithelium, or other elements of the lochial discharge may give rise to fallacy, especially with the copper tests. I then usually adopt the procedure advocated by Allen,[2] which takes up little time and which I have found very satisfactory. His plan is to treat the urine in neutral or faintly acid solution with cupric acetate, whereby a precipitate of xanthin bodies, uric acid, colouring matters, and albumen is produced; a partial precipitate of phosphates and creatinin also occurs. The filtered fluid does quite well for Fehling's test. To put this procedure into effect, take 7 c.cm. of urine, boil in a test-tube, and add at once 5 c.cm. of the cupric sulphate solution used in preparing Fehling's reagent. A precipitate occurs. When the tube has cooled, add 2 c.cm. of a saturated solution of sodium acetate containing a trace of free acetic acid. A further precipitate now occurs, and, on filtering, a greenish-blue solution is obtained. To this are added 5 c.cm. of the other part of Fehling's test (the alkaline tartrate solution), and the whole is boiled for fifteen seconds. Cuprous oxide at once separates as an orange-yellow precipitate in the presence of one part of sugar in five hundred, or less. This method of Allen's I can cordially recommend.

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[1] C. C. Douglas, "The Nitro-propiol Test for Sugar in Urine," *Transactions of the Glasgow Medico-Chirurgical Society*, 1901-1902, vol. iv.

[2] H. Allen, *The Chemistry of Urine*, 1895, p. 62.

These tests are all good, and by their aid we can show, as I have stated, that sugar is present; but, when it comes to the question as to whether glucose or lactose is the reducing agent, we are confronted by a less easily-solved problem.

Now, there is a very delicate and certain reaction for the sugars called the phenyl-hydrazine test which, I daresay, all of you know.[1] It consists in heating a little of the suspected fluid with the hydro-chloride of phenyl-hydrazine and some sodium acetate. The heating must be prolonged (30 to 40 minutes), and should be done by placing the prepared test-tube in a water bath of boiling water. The test depends on the formation of a crystalline body called an osazone, which appears as a deep yellow sediment when the tube is allowed to cool. Under the microscope, the deposit has the form of delicate lemon-tinted needles arranged in bundles or radiating groups. Grape-sugar, milk-sugar, and maltose each forms an osazone of its own, distinguishable from one another by their crystalline form and their melting-point.

This test, when positive, is an absolute proof of a sugar, because no substances except certain sugars can produce an osazone, and it can be readily applied clinically. Cane-sugar, I may mention, does not respond to it.

Now, grape-sugar in urine answers very well to this test, and we can therefore say with great definiteness whether or not a urine contains that kind of sugar; but, unfortunately, milk-sugar in urine does not respond to it at all readily, although a watery solution of lactose does. Indeed, I may say that, though I have tried this test many times with urines containing milk-sugar, I have never yet succeeded in obtaining the crystalline lactosazone; so that this reaction, excellent as it is for grape-sugar, does not enable us to say positively that milk-sugar is present.

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[1] R. v. Jaksch, "Die Phenyl-hydrazin als Reagens zum Nachweis von Zucker in der klinischen Chemie, u.s.w.," *Zeitschr. f. klin. Medicin.*, Bd. xi, 1886, S. 20.

What about the yeast test? We all know that this is very admirable for determining whether or not grape-sugar occurs in urine (provided the amount be not too small), but milk-sugar itself does not ferment as such. Under the prolonged action of yeast, however, it is inverted into glucose and galactose, and, after that, alcohol and carbonic acid gas are formed. I may state that I have only once, in cases of lactosuria, been able to obtain a positive result with the fermentation test, however prolonged the action of the yeast may have been.

It is well known that a similar inversion may be determined in lactose by boiling it with a dilute mineral acid. It then undergoes hydrolysis, and we obtain glucose and galactose, thus—

$$\underset{\text{Lactose.}}{C_{12}H_{22}O_{11}} + H_2O = \underset{\text{Glucose.}}{C_6H_{12}O_6} + \underset{\text{Galactose.}}{C_6H_{12}O_6}.$$

Ruizard accordingly has suggested the adoption of this procedure for the detection of milk-sugar (*Berl. Chem. Berichte*, 1896, xxix, 147). He says that one might boil the suspected fluid with dilute hydrocloric acid, and then apply the phenylhydrazine test. I have tried this, and must confess that, in my hands at least, it has not answered well.

Another plan suggested is to hydrolyse the milk-sugar, and then test with Barfoed's reagent. I stated already that the cupric tartrate of Fehling's solution was pretty readily attacked by milk-sugar, but a solution of cupric acetate, slightly acidulated with acetic acid, is reduced by grape-sugar and *not* by milk-sugar. Such a solution is termed Barfoed's reagent, and Ruizard says that if you get a urine which will not reduce the reagent at first, but will after boiling with dilute hydrochloric acid, you may conclude that it at first contained milk-sugar. I cannot say that I have found this test answer at all well.

The only other test I know of to distinguish milk- from grape-sugar is Rubner's.[1] It depends upon the colour-change produced when a solution of the sugar is boiled with solid lead acetate, and ammonia is added. Salkowski[2] recommends that to 5 c.cm. of the solution 4 grms. of solid neutral lead acetate should be added, and the whole boiled for two minutes; ammonia is then to be added freely, and the mixture heated once more, when a deep red colour appears in the case of milk-sugar, and at length a red precipitate falls. Grape-sugar, under similar circumstances, yields a chamois-yellow fluid. My experience has been that while quite distinctive colours can be obtained in the case of pure aqueous solutions, the results are not good when we deal with milk-sugar in urine, especially as the amount present is often very small. So you see that there appears to be no very good positive test for milk-sugar in urine. To give a concrete example. On 14th September, 1901, I examined the urine of Mrs. O'B., a multipara, in the fourth day of the puerperium, and nursing regularly, the case being one of fairly well-marked lactosuria. The following are the results of my trials to ascertain positively whether milk- or grape-sugar were present:—

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[1] M. Rubner, "Ueber die Einwirkung von Bleiacetat auf Trauben— und Milch—Zucker, *Zeitschr. f. Biol.*, Bd. xx, 1884, S. 397.

[2] Salkowski, *Prat. der physiol. und pathol. Chemie*, Berlin, 1900, S. 88.

1. Trommer's test gave a positive reaction, although not very well marked.
2. Fehling's test gave similar result.
3. Phenyl-hygrazine, after forty minutes' heating, was negative, no crystals being obtained.
4. Barfoed's reagent (acetate of copper) was negative.
5. Rubner's test gave a *café-au-lait* coloration, and exactly the same with grape-sugar.
6. Ruizard's test—(*a*) after boiling 60 c.cm. urine with 6 c.cm. of 10 per cent HCl_2 no reaction was yielded with copper acetate (therefore unsatisfactory); (*b*) the hydrolysed urine treated for forty minutes with phenyl-hydrazine, and filtered hot, gave a yellow and amorphous deposit on the filter-paper, and a yellow filtrate which, on cooling, deposited small, roundish, spinous crystals, probably galactosazone. This test was, therefore, positive.
7. The yeast test yielded a small bubble or two in six hours, 2 to 3 c.cm. of gas in eighteen hours, and 3 to 4 c.cm. in twenty-four hours.
8. Nitro-propiol gave a positive reaction.

In this case, which, as you see, was examined very fully, the only really positive test was the second part of Ruizard's, where crystals of galactosazone were obtained. As I have already stated, this test is not always so satisfactory in its working. Had it been negative in the above instance, I could not have said positively that milk-sugar was present, but there would have been a very strong probability that this was the case for two reasons—(1) the urine did not ferment with yeast till eighteen hours had passed, and (2) the untreated urine did not react to phenyl-hydrazine. Now, there must have been a sugar there, since the urine did ferment, and it could not have been grape-sugar, else it would have been shown by the phenyl-hydrazine test, which, I have satisfied myself, is at least twice as delicate as the fermentation one. The result is arrived at, as you see, rather by a process of exclusion than by any positive test; and I have generally been in the habit of saying that if you have a urine which responds fairly well to Fehling's test (having excluded fallacies here), but does not yield any crystals with phenyl-hydrazine, and does not ferment (except very slowly) with yeast, you may be practically certain that it is milk-sugar which it contains. This opinion I formed for myself, and I found out later that it was the same as that expressed by v. Jaksch.[1] In the late autumn I began working at this matter with a view to establishing some really positive and practicable test for this condition, but, as yet, my efforts, I regret to say, have not met with success.

Dr. Samuel Sloan said he had noticed temporary glycosuria in early pregnancy, and asked if lactosuria was more marked at the beginning or end of pregnancy.

Dr. Douglas replied, and said it was most marked when the mammæ were engorged at the beginning of the puerperium and up to the tenth day. He could not say what the condition was during early pregnancy.

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1901-1902.

MEETING III.—31ST OCTOBER, 1901.

The President, DR. JOHN STEWART, *in the Chair.*

THE INFLUENCE OF A MEDICAL SOCIETY ON THE POSITION OF THE GENERAL MEDICAL PRACTITIONER.

BY DR. JOHN STEWART.

Dr. Stewart's paper appears as an original article at p. 1.

On the motion of *Dr. James Hamilton,* a hearty vote of thanks was awarded Dr. Stewart for his address.

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[1] R. v. Jaksch, *Clin. Diagnosis*, fourth edition, 1899.

MEETING IV.—14TH NOVEMBER, 1901.

The President, DR. JOHN STEWART, *in the Chair.*

DEMONSTRATION IN OPHTHALMIC INSTITUTION.

BY DR. A. MAITLAND RAMSAY.

The first part of the demonstration consisted of an exhibition of the more common external diseases of the eye and ophthalmoscopic cases, some pathological specimens—microscopic and macroscopic—and a number of very fine stereoscopic photographs, skiagrams, and lantern slides.

At a later part of the evening a number of optical instruments were displayed, and a demonstration was given of the modern application of electricity in the treatment of eye disease. The Finsen lamp was also shown, and its application in photo-therapy.

Dr. Ramsay brought the proceedings to a close by a short and lucid lecture, accompanied by lantern demonstration on hypopyon ulcer, including its causation, complications, and treatment.

On the motion of the *President*, a cordial vote of thanks was awarded Dr. Ramsay for his demonstration.

REVIEWS.

Manual of Diseases of the Ear. Third Edition, Revised and Partially Rewritten. By THOMAS BARR, M.D. Glasgow: James Maclehose & Sons. 1901.

DR. BARR'S book has gained for itself so high a place amongst otological text-books by virtue of its lucidity and accuracy that we need only direct our readers' attention to the appearance of a third edition. In this there is no change in the style of volume, and but little in the subject matter from that of the second edition.

The most notable additions are those dealing with the treatment of intracranial and vascular complications of purulent disease of the middle ear, and malignant disease of the middle ear.

The author is to be congratulated upon the rapid sale of the second edition, which was published in 1896. We believe that this new edition will be disposed of in an even shorter period.

Purulent Nasal Discharges, Their Diagnosis and Treatment. By HERBERT TILLEY, M.D., B.S., F.R.C.S. London: H. K. Lewis. 1901.

THE first portion of this book deals with the purulent discharges from the nasal cavities proper. A chapter is devoted to those met with in early infancy due to gonorrhœal infection and to inherited syphilis. For the former condition it is recommended that the nostrils be cleansed by mopping with wool soaked in warm boracic or soda solution, and that afterwards two to three drops of a five per cent solution of cocaine in liquid paraffin be dropped into each nostril. We would question the propriety of this latter procedure.

In a short section reference is made to the discharges associated with the exanthemata and other acute infectious diseases. The nasal manifestations of syphilis and tuberculosis, and the pathological condition of the nasal or nasopharygeal mucous membrane in adenoids, acute and atrophic rhinitis, struma, and in the presence of foreign bodies are successively considered.

The first part of the volume is merely complementary to the second, which deals with suppuration in the accessory cavities of the nose. We may at once state that we consider this portion of the work eminently satisfactory. The anatomy of each cavity is briefly described in so far as it is of practical importance; the etiology and diagnosis are discussed in a manner indicating a thorough knowledge of diseases of the nose; and the treatment recommended is judicious, and evidently the outcome of a large experience.

On p. 32 the author states that several cases of antral suppuration have been recorded in young children. He seems to be unaware that these were really cases of osteomyelitis of the superior maxilla. We would also remind him that the accessory opening into the antrum is frequently much larger than the ordinary ostium, and not smaller as stated on p. 36.

The author assigns to dental caries the chief *rôle* in the production of antral empyema, for in almost all his cases (numbering about 200) some degree of caries has been rarely absent in the corresponding teeth.

He has also found that the marked development of polypi and granulations in the ethmoidal region is generally associated with multiple accessory sinus suppuration, rather than an evidence or frequent concomitant of antral empyema alone. It is upon the appearance in the middle meatus that he lays most stress in making a prognosis; if this region be free from polypi and granulations, the likelihood of cure by the alveolar method of treatment is greater than when such evidences of chronic inflammation exist.

The section on the frontal sinus is specially worthy of mention. Although the author has had considerable experience of the radical operation, the terms in which he recommends it are extremely guarded, and indicate the tendency which has been growing of late not to operate when intranasal treatment gives relief to all urgent symptoms, and the discharge of pus is very slight and causes no obvious inconvenience.

Chapters on suppuration in the ethmoidal cells and sphenoidal sinus complete this little work, which we can conscientiously recommend to all interested in inflammatory affections of the accessory sinuses of the nose.

Lectures on Nasal Obstruction. By A. MARMADUKE SHEILD, M.B., F.R.C.S. London: Rebman, Limited. 1900.

THIS little book contains the substance of three clinical lectures which deal in an elementary manner with the various forms of nasal obstruction.

The author's fluent style and his *ex cathedra* utterances impart a certain charm to what would otherwise be a commonplace, and too often inaccurate, piece of work.

In the preface he states that the opinions promulgated in these lectures differ from much of the practice of the day. We accordingly look for something original, but only find that when he differs he errs.

Thus, we read on p. 5 that "the peculiar nasal polypus which we have especially to discuss originates in the mucous membrane near necrosed bone." On p. 20 we are told that "when bony growths spring from the floor of the nares they are usually mere spurs, and are quite common in adults." On the same page it is stated that "an enlarged turbinal may actually touch the septum, an area of pressure ulceration being found at the place of contact. Again, the turbinal may be deformed by cleavage or otherwise, and thus cause considerable obstruction." We learn, at p. 25, that "the pedicle (of the polypus) is usually attached to the outer wall of the nose on the mucous membrane of the inferior or middle turbinal, or the nasal hollow between them." The following extraordinary recommendation is made on p. 52:—"In bad cases of nasal polypi removal of the inferior turbinals is a most useful aid to treatment, enabling one to reach the upper part of the nose, and affording free drainage."

The sections dealing with malignant disease, and the conduct of the operation for the removal of adenoids, deserve a word of commendation.

A Handbook of Diseases of the Nose and Pharynx. By JAMES B. BALL, M.D. Fourth Edition. London: Baillière, Tindall & Cox. 1901.

THIS very readable practical handbook, dealing specially with diseases of the nose, has reached a fourth edition. Former editions have been favourably reviewed in these pages, and we have pleasure in directing attention afresh to Dr. Ball's book, the plan and scope of which is similar to that of its predecessors.

A Treatise on Diseases of the Nose and Throat. By ERNEST L. SHURLY, M.D. London: Henry Kimpton. 1900.

THIS book gives a very complete *résumé* of present day practice in connection with the diseases of the throat and nose. It is an imposing volume of over 700 pages, well printed and freely illustrated, having over 200 black and white reproductions and several coloured figures, the latter for the most part borrowed from Grünwald.

Like similar text-books, the anatomy of the upper air passages is described in the opening chapter, but in this case the photographic illustrations of the component parts of the nose, and of the structures and relations of the nasal and accessory cavities, are worthy of special mention. A short description of the methods by which the upper air passages are examined follows, after which the subjects are arranged according to a classification based upon the general nature of the disease treated, rather than according to the anatomical region involved.

The general practitioner will find the book of considerable value for purposes of reference, but it is much too bulky a volume to be of service to the medical student.

Tendencies to Consumption: How to Counteract Them. By J. D. E. MORTIMER, M.B., F.R.C.S. London: The Scientific Press, Limited.

THE plan and scope of this little book are well indicated in its preface:—"It consists (Part I) of a short account (written in language as simple as the subject admits) of the nature of tuberculous disorders as at present understood, and (Part II) of the consequent steps to be taken against their development. This plan has been adopted because directions are apt to be put aside as of little importance, or at best only blindly followed, unless some intelligible reasons are given for their enforcement." And for the purpose as here stated we consider the book admirably well adapted. It is pleasantly written, the interest is sustained from beginning to end, and the matter is sound. The author hopes that it "may be found useful by some of his brethren engaged in family practice, who may, by placing it in the hands of those interested in the subject, be able to convey to them information which there is hardly time or opportunity to impart in the course of ordinary professional visits." The book seems well suited for such a purpose, and we would like to give it our hearty recommendation.

A Practical Guide to the Administration of Anæsthetics. By J. PROBYN-WILLIAMS, M.D. London: Longmans, Green & Co. 1901.

DR. WILLIAMS, in his preface, modestly disclaims any idea of rivalling the larger manuals, but trusts it will prove of benefit to students. We have no hesitation in saying that he has succeeded admirably in his task. The book is evidently written by a teacher of much experience. His descriptions of the methods to be followed in the use of the various apparatus employed in the giving of nitrous oxide, nitrous oxide and oxygen, chloroform and ether, are clearly and concisely described, and the excellent illustrations with which the book is furnished render the task of following him a comparatively easy one.

Briefly, the contents consist of an introductory chapter, dealing with the general consideration of the administration of an anæsthetic. Then follows an important and well-written account of the difficulties and dangers of anæsthesia. He also considers very fully the treatment of complications apt to arise.

Thereafter, he describes the methods of administration of the anæsthetics in common use, and we observe that he is thoroughly up to date. For example, he enters into full details of the method of giving nitrous oxide by the nose, as advocated by Mr. Patterson, so as to allow of the gas being continuously given while a dental operation is in progress. In discussing the choice of an anæsthetic, he unhesitatingly endorses the view generally prevalent in the London schools, that ether, unless some contra-indication exists, should be the routine anæsthetic because of its greater safety. The last chapter deals with the use of local anæsthesia.

We heartily congratulate him on his book, for in our opinion it meets a distinct want, and we believe that not only students but practitioners interested in the subject will derive much benefit from its perusal.

A Manual of Medicine. Edited by W. H. ALLCHIN, M.D. Lond., F.R.C.P., F.R.S. Ed. Vol. III: Diseases of the Nervous System. London: Macmillan & Co., Limited. 1901.

THIS volume is a worthy successor of the others, and it would scarcely be possible to give it higher praise. There are eight contributors in addition to the editor, who writes on headache and trophoneuroses. Professor Sherrington gives an admirable account of the general anatomy and physiology of the nervous system, and a most elaborate and valuable table of spinal segments. The latter shows the connections of the spinal nerve roots from the first cervical to the fourth sacral. In the case of the afferent root, the connection with skin, muscle, and viscera, reflex movements, and the level of surface origin are separately indicated; and in the case of the efferent root, its distribution to striped muscle, blood-vessels, and glands or viscera, and the chief movement effected through its means are indicated in separate columns.

Dr. J. S. Collier and Dr. W. S. Colman write on functional diseases of the nervous system, the former describing also aphasia and other speech defects. Dr. Ormerod gives an account of diseases of the spinal cord and of muscular dystrophies, while Dr. Purves Stewart discusses lesions of the cauda equina and diseases of the peripheral nerves. Dr. Aldren Turner writes on organic diseases of the brain and its membranes, and on the neurone in relation to nervous disease. Dr. James Taylor gives a contribution on medical ophthalmology, and Dr. Bertram Abrahams supplies one on the application of electricity in nervous diseases.

The *Manual* thus far is one of the most admirable works with which we are acquainted.

The Theory and Practice of Medicine. By HENRY WALTER SYERS, M.A., M.D. In Two Volumes. Vol. I. London: Rebman, Limited. 1901.

THERE are now so many very excellent text-books on the practice of medicine that one cannot but admire the courage of the author who will venture to try conclusions with those which are already so firmly settled in the public favour. But, though this may be so, it cannot altogether prevent us from comparing the newcomer with those that are now standard, even if it be to the advantage of the latter.

It is somewhat difficult to describe this book by Dr. Syers, for it has no specially outstanding characteristics. We are told in the preface that it is an attempt "to describe the chief facts which underlie a knowledge of the principles and practice of medicine," and that all matters which are superfluous have been omitted, especially "long disquisitions on morbid anatomy which it is impossible for the student to understand unless he has large *post-mortem* experience." "For the same reason, but little has been said concerning the very numerous theories on the pathology of individual diseases. These theories are mostly conspicuous only for their inadequacy, and are, moreover, constantly changing; they are, therefore, far more likely to hinder than to forward the progress of the student in his practical work."

We have quoted the above passages, for they seem to us to give a general idea of the lines along which the book has been written. Its merits, it will be seen, are meant to be in a degree negative, and therein, we think, is its chief fault. Theories may at times be inaccurate, but their study is really a good mental training, for the student who deals in theories will be much less likely to approach his medicine as an empirical study than one who deals only in dogmatic statements. Moreover, descriptions of diseases are difficult for the student to remember unless he understands the meaning of the individual symptoms, and to understand these he must have some actual or theoretical knowledge of the pathology of disease. And so, in our opinion, a little more of what might be called the philosophy of morbid processes would have been an advantage to this book. In this connection, too, we cannot avoid a reference to the author's frequent scepticism as to micro-organisms being the cause of certain diseases, and to his suspicion of bacteriology generally. We hold that the methods of bacteriology are as accurate as those of any other biological science, and that a better acquaintance with them on the author's part would give him more respect for this most important branch of medicine, and save him from such an error as that found on pages 319 and 320. Here, in one place, we are told that lobar pneumonia is probably due to "the *pneumococcus* of Friedländer," and, a little later on, that it is the "*diplococcus* or *pneumococcus* of Fränkel" that is the most important micro-organism; while that "another organism met with in pneumonia, but much less frequently, is the *bacillus pneumoniæ* (Friedländer)."

The book is well written and the descriptions are good, though in places somewhat scanty. For example, the sections on dyspepsia and diseases of the stomach generally seem much too meagre for a work of this size; and the modern methods for examining gastric contents should surely get some notice. The chapter on jaundice also seems to us deficient.

Considering the book generally, and in so far as we can judge it from this first volume, we are rather disappointed with it. We expected more from a work of its size, and we cannot think that it compares too favourably with several of the other text-books on the practice of medicine that we have recently had before us.

Elements of Practical Medicine. By ALFRED H. CARTER, M.D., M.Sc. Eighth Edition. London: H. K. Lewis. 1901.

THIS book is now so well known to the profession, and its previous issues have brought it so often under review, that we have little more to say of it than just to note the advent of a new edition. This eighth edition has been thoroughly revised, and in parts entirely rewritten, but its character and general arrangement remain unaltered. Any changes or additions that have been made are only such as have been necessary to keep the book in line with the advance of modern medicine.

We recognise, of course, that in teaching students one must deal in exact statements, and dispense as much as possible with qualifying clauses. And so, in a treatise of this size, one cannot avoid statements which, if dogmatic, are convenient, though not alway absolutely true. We do not, therefore, take much exception to the statement, on p. 206, that "caseous lesions are due to the introduction of tubercle bacilli by inhalation, and their subsequent arrest in the terminal bronchi and air-cells." This is doubtless the simplest explanation of the mode of infection in phthisis pulmonalis. But it is not in harmony with many of the appearances seen in the *post-mortem* room and with experimental pathology, which rather points to the bronchial glands being primarily infected, and to the lung being subsequently involved.

We note, too, on p. 101, that in dealing with the malarial organism the author says that the "significance and mode of origin" of the crescent bodies and flagellate bodies has not yet been worked out. Surely this is misleading, and requires revision.

But the book as a whole is, as it always has been, an admirable introduction to the study of the practice of medicine.

The Principles and Practice of Medicine, Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., F.R.S., F.R.C.P. Fourth Edition. London: Henry Kimpton. 1901.

This new edition of Professor Osler's most able and delightful treatise will certainly get a hearty welcome from those for whom it is designed, both in this country and in America. The work is so universally known and prized in English speaking countries, that it seems absurd at the present day even to praise it. A great amount of new work has been incorporated in the present issue, and in reading various sections we have been greatly struck both by the enormous amount of labour that must have been bestowed on details, and by the remarkably up-to-date character of the information. We heartily recommend this treatise to all medical practitioners and students.

Gonorrhœal Arthritis: Its Pathology, Symptoms, and Treatment. By L. VERNON JONES, M.D. London: H. K. Lewis. 1901.

IN his preface the author tells us that his apology for writing this book "is the absence of any work on the subject, and my consequent difficulty some years ago in obtaining any reliable information, except of a fragmentary nature, as to the course and treatment of this phase of gonorrhœa." The author's apology may be excellent, but we are not so sure about his book. Indeed, it seems to us also somewhat "fragmentary," and its account of gonorrhœal arthritis is by no meams satisfying.

The chapter on "pathology" consists mainly of a description of the morphology of the gonococcus, and of an enunciation of the elementary phenomena of inflammation. The chapter on "symptoms" conveys to one's mind but an imperfect picture of the course of the disease; and the chapter on "treatment," though containing more pages, contains little more information.

The general conception of the disease is, without doubt, just as it should be; but we feel that the author, in writing his book, his taken the task too lightly, and that its perusal helps one but little to a knowledge of gonorrhœal arthritis.

The Criminal Mind. From the French of DR. MAURICE DE FLEURY. London: Downey & Co. 1891.

OUR Western civilisation, of which we are inclined to be boastful, is still far from the ideal. It is apt to be overlooked that it has certain essential elements, the inutility of which is obvious. Why is it, for instance, that after 2,000 years of Christianity the civilisation of England in these times demands every day in the year the sacrifice of 8 persons by suicide, the commitment of 44 people to the asylum, and the commission of over 200 serious crimes and over 2,000 lesser offences? There are a good many more things than tuberculosis that need remedying.

Looked at from the historical point of view, one cannot help being impressed with the fact that one of the most important factors in the evolution of society is medicine, and that it is becoming more so as time goes on. Time was when the care of the sick was entirely undertaken by the Church—let it have all due credit. Now all that devolves upon the medical profession; and the more one considers, the more is one impressed with the conviction that the ideal civilisation is one which will be under the governance of an all-wise benevolent medical autocracy, whose sole function will be the public welfare. Dr. de Fleury takes one step further in this direction. He would have society look upon its criminal delinquents as sufferers from disease—as sick men who are not to be held as themselves responsible for their wrongdoing—which is simply the manifestation of derangement of the nervous system. He is quite convinced himself on this point, and considers the matter as one beyond dispute, and proved by what he calls scientific truth. The public is, however, notoriously slow to assimilate new ideas, even after the assurance by medical men that they are "finally accepted and henceforth incontestable," and that is where Dr. de Fleury will have the difficulty.

But some of even this progressive author's ideas seem to us to be not quite of the most modern. The enlightened do not, these days, regard vengeance as the motive of punishment for wrongdoing. It is represented as the inevitable consequence of infraction of moral laws, just in the same way as the breaking of the physiological laws of health is surely followed by detrimental consequences. His proposed remedies, too, are characterised by much that is naive, inconsistent, and crude. He protests that he asks no better than to restrict the responsibility of the members of his profession, and that he is accustomed to take things too religiously, and yet this is his philosophy:—

"We have adopted the idea that criminals are only sick persons, incurable and dangerous, of whom we must get rid. But, when all is said, only a narrow space divides them from incurable lunatics, violent maniacs, or pitiable idiots—all poor degraded beings, human creatures for ever useless, grievous to behold, for whom life has neither worth nor pleasure in their own persons or those of others. If we decide, for æsthetic and economical reasons merely, upon suppressing some hundreds of irresponsible but irremediably bad men, why then, after all, should we not be led on to procure merciful repose for those other irresponsible beings for whom we must always desire cessation of life."

Such an attitude of mind in a medical man is grotesquely criminal; and, after all, even when he has decreed the death penalty, not only on the incurable criminals, but also on the hopelessly insane (of whom there are somewhere about 100,000 in England, 20,000 in Ireland, and 15,000 in Scotland), does he imagine he has provided any real remedy for crime and insanity? Not that way lies the true remedy. We truly believe that Dr. de Fleury is an earnest, well-meaning man, but his sense of proportion is a bit at fault. His arguments are unconvincing, and his suggested methods of social reform are crude and inefficacious, sadly antagonistic to the doctrine of "liberty, equality, fraternity," and, so far as regards the insane, enough to make Pinel turn in his grave.

Nervous and Mental Diseases. By ARCHIBALD CHURCH, M.D., and FREDERICK PETERSON, M.D. With 322 Illustrations. Third Edition, Thoroughly Revised. London: W. B. Saunders & Co. 1901.

SUCH a short time has elapsed since we noticed the first issue of this work, that we were scarcely prepared to find that it is already in a third edition. The book has been revised and partly rewritten, the number of illustrations and the amount of tabular matter have been increased, and some new diagrams have been added. The authors may well be gratified by the favourable reception which has been accorded to this treatise.

Röntgen Therapy. By DR. E. SCHIFF. London: Rebman, Limited. 1901.

THIS is a series of four well-written articles published in book form on "Röntgen therapy" as a treatment in dermatology. The first article gives the history of the treatment as originally tried in hypertrichosis following the accidental shedding of hair after exposure to the x-rays; the author cites cases and gives details of experiments. The second and third articles give very interesting reviews of the use of these rays in lupus, and the results gathered from such eminent authors and dermatologists as Kummel, Schonberg, Neissen, and many others. The fourth is simply a category of the many skin diseases in which this new treatment has been found beneficial, and of its histological effects, with a discussion on the probable bactericidal influence of these rays.

While we admire the enthusiasm of the various authors, we cannot help thinking that if the x-rays have been effecting such excellent results in so many diseases of the skin, dermatologists have at last found a panacea for all chronic skin affections; but of this we are inclined to be sceptical!

The whole series is well written and interesting throughout, and deserves to engross the attention of both physicians and surgeons. We therefore recommend this publication to all who are interested in the progress made in the theory and *technique* of the "Röntgen rays," and especially in the important matter of skin diseases.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

SURGERY.

By G. H. EDINGTON, M.D.

Carcinoma arising in Wall of Teratoma, Dermoids, and Sebaceous (Atheromatous) Cysts.—In the May number of the *Journal* for the present year (p. 392) we had occasion to publish an abstract on the subject of "Carcinoma occurring in the Wall of a Dermoid Cyst." In the issue of last month (p. 393) we noted a paper on angio-sarcoma occurring in teratoma of the testicle, and another on adeno-carcinoma in a sacral teratoma. Since then several similar cases have been published, and we give below a summary of these:—

1. *Kopfstein.*—Man, aged 58, when 10 years old fell from a roof and injured sacral region. Some months later there appeared a small swelling, which, in the course of twenty years, grew to size of fist. After the age of 48 there occurred rapid increase in size, and, when seen by Kopfstein, there was a fluctuant tumour, the size of a child's head, and covered by normal skin. In November, 1900, the tumour was removed. It was an *epidermoid* cyst, containing epithelium and *débris* in a yellowish fluid. There were neither hair nor teeth. Microscopically, the wall consisted of slightly vascular capsule of fibrous tissue, lined by stratified epithelium, without glands or hair. At one spot there was carcinomatous degeneration, with numerous pearl-nests.—(*Centralblatt für Chirurgie*, No. 41, 1901.)

2. *Mertens.*—Man, aged 47, suffered from intermittent hoarseness in spring of 1900. In August the condition was worse, and more continuous. Examination showed swelling and redness in region of left arytenoid cartilage and sinus pyriformis; superior cornu of thyroid cartilage was tender, and swollen to size of a bean. Pressure caused pus to flow from sinus. In October a dermoid cyst was removed from outer surface of thyroid cartilage on left side. Three weeks later a portion of margin of ulcer behind arytenoid removed, and found to be carcinomatous. There was distinct bulging into larynx on left side, and nodules were felt below scar of first operation. In November, extirpation of larynx and glands, and of a second dermoid cyst. In following May, recurrence involving sterno-mastoid and jugular vein. Microscopically, first cyst removed found to be simple sebaceous; the second was *dermoid*, and in spaces in its capsule were epithelial masses—typical alveolar carcinoma; there were no pearls, and periphery of nests formed of cylindrical cells, internally were cubical, and, lastly, squamous. The condition was found irregularly over whole inner surface of cyst. Lymphatic gland showed squamous-celled metastasis.

The tumour of larynx was carcinomatous, and probably arose from another dermoid cyst which had become carcinomatous and had ulcerated into œsophagus. The case occurred in Trendelenburg's clinic, and is reported in Bruns' *Beiträge*, Bd. xxxi, Hft. 2.

3. *Krische.*—Man, aged 40, had lump, size of hazel-nut, in left loin for one year. Painful for last few weeks. The tumour, size of dove's egg, lay under the skin three fingerbreadths above crista ilii; the tumour was dense, and adherent over its summit to skin. After removal it was found to be *sebaceous cyst*, with pea-sized papillary growths on inner wall; these were carcinomatous; and, microscopically, epithelial buds, without pearls, were found in connective tissue. In many spots the arrangement was glandular, conforming to "Krompecher's carcinoma."

[Krompecher (in Ziegler's *Beiträge*, 1900, xxviii, 1) describes a group of carcinomata arising by proliferation of the cylindrical layer of the stratum Malpighii. Nests are formed consisting of long cylindrical cells, which stain intensely. Under a high power, there is often a striking resemblance to a spindle-celled sarcoma. The growth may be in form of long ribbons, or lining canals and cysts. Hyaline or myxomatous degeneration of the connective-tissue stroma is frequent. He names the group "carcinoma epitheliale adenoides."]

He gives a *résumé* of reported cases (27 in all), which he tabulates as follows:—

Nature of Cyst.	Carcinoma—no particulars.	Epithelioma (Cancroid).	Krompecher's Carcinoma.	Adeno-carcinoma.	Cyst Open.	Cyst Closed.
Teratoma = 5	...	3	1	1	5	...
Dermoid = 14	7	6	1	...	13	1
Sebaceous = 8	7	1	...	...	8	...
27	14	10	2	1	26	1
	27				27	

Krische's case falls to be added. He considers it *unique* on following grounds:—First reported case of *sebaceous cyst* showing Krompecher's carcinoma; carcinoma has developed in cyst which has undergone neither ulceration nor suppuration. He includes, lastly, an unpublished case of "cancroid" by—

4. *Garré.*—Woman, aged 63, *sebaceous cyst* low down in occipital region, of ten years' duration; inflamed and broken by comb; ulcerated mass excised one year later; microscopically, cancroid.—(*Ibid.*)

5-12. *Linser* reports a series of eight cases:—(1) Woman, aged 54—*Dermoid* of scalp, with papillomatous projection into cyst, and apparent transition to carcinoma at base of papilloma. (2) Woman, aged 55—*Epidermoid* cyst of scalp, solid; calcification; epithelial nests and strands—not typical epithelioma. (3) Man, aged 60—*Epidermoid*, thigh, ulcerated; subcutaneous epithelioma with calcification. (4) Woman, aged 65—*Dermoid*, scalp; cystic papilloma, sparse calcification; epithelial nests and pearls. (5) Woman, aged 56—*Epidermoid*, scalp, ulcerated, resembles adeno-carcinoma of kidney; has local metastases. (6) Woman, aged 64—*Epidermoid*, multiple, in scalp; one growing quickly, ulcerated; epithelioma infiltrating subcutaneous tissue. (7) Man, aged 59—Cyst on buccal surface of hard palate. (8) Woman, aged 58—Cyst, upper margin of orbit. Both 7 and 8 showed infiltrating carcinoma, with gland metastases.

Linser draws following conclusions from these eight cases:—

1. Epithelial proliferation in dermoid cysts is not so rare as is commonly thought.

2. It proceeds almost without exception from that part of the cyst-wall which lies immediately under the skin.

3. This circumstance, as also the history, speaks strongly for the view that external influences play an essential part in the etiology of these new-formations.

4. The epithelial proliferation extends at first into lumen of cyst, and so forms a papilloma, which, if it remains intracapsular and fills the cyst-cavity, assumes quite the appearance of a solid epithelial tumour, often with marked calcification.

5. Should it not remain stationary at this stage, it grows either into a secondary formation—encapsuled epithelioma without encroaching on surrounding tissue, or passes over into a genuine carcinoma with infiltrating growth.—(*Ibid.*)

Tuberculosis of the Testicle.—In the *Revue de Chirurgie* for November, 1901, appears the report of proceedings of the Thirty-third Congress of the German Surgical Society, held in Berlin in the month of April. Baumgarten (of Tübingen) read a paper on "Experimental Tuberculosis of Genito-urinary Organs." Attempts to infect the testicle in the rabbit by the urethra were unsuccessful, although, ultimately, the posterior urethra always became affected, and, also, often the prostate and the trigone. Even after the lapse of two years, testicle, vas, and kidney remained sound. On the other hand, injections of cultures of bacillus into the epididymis constantly resulted in infection of vas and prostate, while the opposite vas never became diseased. With regard to the *results of castration*, von Bruns is favourably impressed with that operation. The arguments against the method are that, as at an early period in the case, the epididymis alone is involved, destruction of focus along with resection of epididymis is sufficient; by castration, at later period, the disease is not completely removed, as other parts of genito-urinary apparatus are involved; double castration is followed by disorders of nervous system and of general condition.

Von Bruns bases his opinion on the study of 111 cases, some of which go back for thirty-four years. Of his cases, 78 underwent unilateral, and 33 bilateral, castration. In all, the vas was resected high up, but the vesiculæ and prostate were untouched. His observations show that the testicle is affected in proportion to the long-standing of the disease in the epididymis, viz., 24 per cent after three months, 40 per cent after four months, and later, 60 per cent. He, therefore, considers resection of epididymis insufficient. Tuberculosis of second testicle supervened in 26 per cent of cases of unilateral castration, hence early operation is called for.

As regards results:—Cures after unilateral operation equal 46 per cent, dating from three to thirty-four years: after bilateral, 56 per cent; the remainder die of urinary or pulmonary tuberculosis. Von Büngner insists on the importance of high castration, drawing down the vas slowly until it breaks. Schede's fears of opening the peritoneum, or of rupture of vas through a tubercular focus, von Büngner looks on as chimerical, as also that of hæmorrhage. In some cases resection of vesicula and prostate (by sacral or perineal route) is required. In subjects too feeble to stand these serious operations, he injects iodoform and glycerine into both ends of the ruptured vas, and he mentions good results in two cases. The injection may be combined with castration.

O. Simon advocates castration. He has studied 107 cases operated on during the last twenty-seven years in the Heidelberg Clinique; 61 remained cured. He insists on the fact that improvement in other parts affected (lung, &c.) sometimes follows the operation. F. König (Altona) showed two specimens of epididymo-testicular tuberculosis, one with two caseous nodules in the intra-inguinal portion of the vas, the other with extension along vas as far as vesicula and prostate. In the treatment of genital tuberculosis in man the greatest importance centres in the prostate. Even if epididymis and testicle alone appear involved, one should remove a considerable length of the vas, the patient being in the Trendelenburg position, and with the bladder distended so as to avoid opening the peritoneum. More frequently it is necessary to perform vesiculo-prostatic resection ; the surest access is obtained by osteoplastic resection of sacrum, leaving in the flap the lower pieces of sacrum and the coccyx. König (Berlin) criticised the views of v. Bruns and the experiments of Baumgarten. He does not favour greatly complete castration. Gussenbauer recommended energetic general treatment if softening of the nodules had not occurred ; if caseation and destruction were present he would operate in a radical fashion. Henle (Breslau) preferred conservative treatment, but found that iodoform injections were very painful. Bier (Greifswald) insisted on the utility of hydrotherapy and sea-bathing of short duration.

Pathogenesis and Treatment of Keloids.—According to Goldmann, keloid is a hyperplasia of the cutis depending on an alteration of the elastic tissue of the skin as a primary lesion. The origin may be traumatic, chemical (burns, &c.), or infective (acne, furunculus, variola, syphilis, &c.), and these etiological factors are opposed to regeneration of elastic tissue in the parts on which they act. In keloids the defect is in the reticular zone, in hypertrophic cicatrices it is in the papillary zone ; in the former, hair and cutaneous glands are wanting, but in the latter they persist. He recommends excision and Thiersch's grafts. Lauenstein (Hamburg) had seen, in a sailor, an extensive keloid following a burn. He made multiple incisions of varying depth, and he noticed that all the incisions which did not go deeper than the dermis healed without reappearance of keloid ; on the other hand, recurrence took place in all those which extended as far as the subcutaneous tissue. —(*Ibid.*)

Results of Twenty-five Resections (Intracranial) of the Trigeminal Nerve.—Krause (Berlin) always operates by the method which he published in 1892. He ligatures, when possible, the trunk of the middle meningeal artery ; if not, he introduces into the foramen spinosum, and leaves during the operation, a small hook bent to a right angle. When the hook is removed at the close of the operation, if bleeding is not quite checked, he plugs the foramen with sterilised gauze. As a rule, he completes the operation at a single sitting.

Of his 25 cases, 18 were females and 7 males ; 16 were on right and 9 on left side. Three cases died, one of collapse, a second of heart failure (*asystolie*), while, in the third, the *post-mortem* shed no light on the cause of death. He has never experienced sepsis, but has sometimes seen, following the operation, cerebral troubles, more or less serious, but always temporary (agitation, apathy, somnolence, cephalalgia, aphasia). The final results are very encouraging. So far he has seen no recurrence, although in some cases the operation was done eight years ago ; but although followed by remarkable success in typical trigeminal neuralgia, the operation comes to grief in all cases of hysterical or neurasthenic pseudo-neuralgia. Sometimes after operation there are noted some troubles, persistent, but not alarming, such as—tingling or pain (*tiraillements*) in the face or side operated upon, sensations of burning or pricking, hemianæsthesia of the tongue. The general condition, however, rapidly improves by reason of cessation of pain and disappearance of insomnia.—(*Ibid.*)

A Second Series of a Thousand Thyroidectomies.—Kocher (Berne) considers as suitable for thyroidectomy not only malignant goîtres and those complicated by respiratory difficulty, but also a great number of colloid goîtres treated unprofitably with iodine. The operation (unilateral excision) is not very dangerous, even in very difficult cases. If, in 27 malignant cases, one notes 6 deaths, these are due to concomitant operations, such as excision of trachea, œsophagus, &c. In 929 benign goîtres, there were only 4 deaths. Kocher attaches great importance to asepsis pure and simple, without any liquid disinfectant, and to local anæsthesia with cocaine. Intrathoracic goîtres are the most difficult, but one must distinguish ; Kocher terms all cases deep (*profonds*) which extend into the thorax, and partial or total according or not as they may be palpated in the cervical region. In the latter case, the goître is latent and hidden, and may be for several years impossible to diagnose; the patients may be treated as asthmatics, presenting, as they do, dyspnœic crises, with intervals of complete comfort, and the goître may even give rise to bronchitis, emphysema, or troubles in connection with the right side of the heart. Apart from these pulmonary or cardiac forms, there exists a mediastinal variety characterised by signs of stasis in venous system, accompanied sometimes by exophthalmia and simulating Basedow's disease. Lastly, there is the more easily diagnosed tracheal variety. Intrathoracic goître may be fixed or movable. The former can be recognised only by percussion and radiography; percussion shows dulness below the clavicle and behind the manubrium sterni, radiography gives a shadow, of which the margin is displaced by the movements of respiration. Other signs of prime importance are intense dyspnœa, marked lateral deviation of trachea, paralysis of sympathetic and of recurrent laryngeal nerves. Kocher's assistants have experimented with phosphorus on goîtres. Trechewsky has shown that there exists an inverse relation between iodine and the phosphorus in the thyroid gland. On the other hand, the ingestion of phosphorus is accompanied by increase of the proportion of iodine in the gland, especially in pregnancy and in Basedow's disease. In these cases, one brings about a diminution in the volume of the goître, and an increased functional activity of the thyroid tissue. Phosphorus (administered in tabloids) may have a good influence on all varieties of goître, but further researches are necessary to decide this point.—(*Ibid.*)

Thyroidectomy.—Kraske (Fribourg-en-Brisgau) has performed 400 operations, with a mortality of ½ per cent. He considers that thyroid medication should be finally suppressed, as it is dangerous and can give rise to fatalities; it is powerless to produce diminution of a goître, and creates operative difficulties by provoking adhesions.—(*Ibid.*)

Tuberculous Intrathoracic Thyroiditis: Extirpation.—Goldmann (Fribourg) communicated the case of a man, aged 64, the subject of a tuberculous fistula at the level of the second right intercostal space near the sternum. After resection of the manubrium, a large purulent cavity was exposed, extending upon the left side of the neck. The walls of the cavity were firm and calcareous. The cavity was extirpated, and on histological examination was found to be an intrathoracic tuberculous thyroiditis.—(*Ibid.*)

Books, Pamphlets, &c., Received.

Essentials of Gynæcology, Arranged in the form of Questions and Answers, by Edwin B. Cragin, M.D. Fifth Edition, thoroughly Revised by Frank S. Mathews, M.D. With 57 Illustrations. London: Henry Kimpton. 1901. (4s. net.)

Essentials of Diseases of the Nose and Throat, Arranged in the form of Questions and Answers, by E. B. Gleason, S.B., M.D. Third Edition, Revised and Enlarged. With 112 Illustrations. London: Henry Kimpton. 1901.

A Clinical Manual of Skin Diseases, with Special Reference to Diagnosis, by W. A. Hardaway, A.M., M.D. Second Edition, Revised and Enlarged. With 42 Engravings and 2 Plates. London: Henry Kimpton. 1901. (10s. 6d. net.)

A Manual of Obstetrics, by A. F. A. King, A.M., M.D. Eighth Edition, Revised and Enlarged. With 264 Illustrations. London: Henry Kimpton. 1901. (12s. 6d. net.)

Atlas and Principles of Bacteriology, and Text-Book of Special Bacteriological Diagnosis, by Professor Dr. K. B. Lehmann and R. O. Neumann, Dr. Phil. and Med. Authorised Translation from the Second Enlarged and Revised German Edition. Edited by George H. Weaver, M.D. Part I: Atlas. With 632 Figures on 69 Lithographic Plates. Part II: Text. London: W. B. Saunders & Co. 1901. (2 vols., 21s. net.)

A Laboratory Handbook of Urine Analysis and Physiological Chemistry, by Charles G. L. Wolf, B.A., M.D. Illustrated. London: W. B. Saunders & Co. 1901. (5s. net.)

A Text-Book of Pharmacology and some Allied Sciences, by Torold Sollman, M.D. Illustrated. London: W. B. Saunders & Co. 1901. (16s. net.)

A Manual of the Practice of Medicine, by George Roe Lockwood, M.D. Second Edition, Revised. With 103 Illustrations, many of them in Colours. London: W. B. Saunders & Co. 1901. (17s. net.)

Human Physiology, prepared with special reference to Students of Medicine, by Joseph Howard Raymond, A.M., M.D. Second Edition, entirely Rewritten. With 443 Illustrations, some of them in Colours, and 4 Full-page Lithographic Plates. London: W. B. Saunders & Co. 1901. (15s. net.)

A Text-Book of Medicine for Students and Practitioners, by Dr. Adolf Strümpel. Third American Edition. With 185 Illustrations in the Text and 1 Plate. London: H. K. Lewis. 1901. (24s. net.)

Elementary Ophthalmic Optics, including Ophthalmoscopy and Retinoscopy, by J. Herbert Parsons, B.S., B.Sc., F.R.C.S. London: J. & A. Churchill. 1901. (6s. 6d.)

Syllabus of Lectures to Nurses, by Andrew Davidson, M.D. London: The Scientific Press, Limited. (1s.)

The Guide to South Africa, edited by A. Samler Brown and G. Gordon Brown (1901-1902 Edition). London: Sampson, Low, Marston & Co., Limited. 1901. (2s. 6d.)

A System of Physiologic Therapeutics, Edited by Solomon Solis Cohen. Vol. IV: Climatology—Health Resorts—Mineral Springs (Book II: Health Resorts of Africa, Asia, Australasia, and America—Special Therapeutics). Illustrated with Maps. London: Rebman, Limited. 1901. (Books I and II in Two Vols., 21s. net.)

On Disorders of Assimilation, Digestion, &c., by Sir Lauder Brunton, M.D., D.Sc., LL.D. (Edin. and Aber.), F.R.S., F.R.C.P. London: Macmillan & Co., Limited. 1901. (10s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 21st DECEMBER, 1901.

	Week ending			
	Nov. 30.	Dec. 7.	Dec. 14.	Dec. 21.
Mean temperature,	42·2°	46·3°	36·0°	33·9°
Mean range of temperature between day and night,	13·1°	10·0°	8·8°	10·7°
Number of days on which rain fell,	0	4	4	2
Amount of rainfall, ins.	0	0·68	0·92	0·19
Deaths registered,	355	318	317	329
Death-rates,	24·1	21·6	21·6	22·4
Zymotic death-rates,	3·7	3·2	2·7	3·1
Pulmonary death-rates,	8·4	7·6	7·6	7·6
Deaths—				
Under 1 year,	69	76	77	69
60 years and upwards,	65	62	60	59
Deaths from—				
Plague,	...	...	...	...
Small-pox,	...	...	...	...
Measles,	23	20	19	22
Scarlet fever,	2	4	...	2
Diphtheria,	5	4	1	1
Whooping-cough,	7	4	7	7
Fever,	6	7	7	6
Diarrhœa,	11	8	6	7
Croup and laryngitis,	1	...	...	...
Bronchitis, pneumonia, and pleurisy,	93	90	86	93
Cases reported—				
Plague,	...	...	...	...
Small-pox,	4	4	...	...
Diphtheria and membranous croup,	18	10	12	9
Erysipelas,	40	29	21	39
Scarlet fever,	49	58	40	38
Typhus fever,	1	1	1	...
Enteric fever,	43	26	19	17
Continued fever,	...	...	...	...
Puerperal fever,	...	3	...	2
Measles,*	601	572	542	773

* Measles is not notifiable.

Sanitary Chambers,
Glasgow, *26th December, 1901.*

THE

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ORIGINAL ARTICLES.

MYOPIA AND ITS TREATMENT.[1]

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The term short-sightedness expresses far better than the word myopia the nature of the conditions of which I wish to speak to you to-night. The latter name, derived from a Greek verb, meaning to shut, and the word for an eye, is really applicable only to a resulting symptom—the habit peculiar to short-sighted people who, when they try to see distinctly, partially close their eyelids. It has nothing whatever to recommend it, but its use is so well established, not only in medical, but also in popular, writing, that it is not likely ever to be discarded.

The exigencies of out-door existence, more especially when men have to maintain themselves by hunting, and food-supply depends on accuracy of aim, tend to develop keen long sight, and it is only occasionally, therefore, that among those living under such conditions myopia is discovered. As men's wants became more numerous, however, the use of the eyes for near work increased in importance; when the higher stages of civilisation are reached, clear vision for reading and writing is more in demand than the keen distant sight necessary for the successful pursuit of the chase. In order to adapt it to work under new conditions, Nature has, by increase of length, somewhat altered the shape of the eyeball. This change has been brought about gradually, to meet the altered conditions of men's work, and has produced an eye which enables its possessor to see with great distinctness any small object that may be held close to it.

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[1] A post-graduate lecture delivered on 26th November, 1901, in the Glasgow Ophthalmic Institution.

The myopic eye may thus be regarded as in some ways an evolution from the emmetropic, but more particularly from the hypermetropic, form. In no sense, however, can it be looked upon as more perfect. The visual advantages claimed for the short-sighted are more apparent than real, and a state of myopia can no more be considered perfection than can a heart hypertrophied to overcome an obstruction in the circulation, and so to maintain compensation, be looked upon as more perfect than the normal heart. Both organs rise to the occasion and overcome a difficulty, but each becomes liable to dangers and accidents to which it is not exposed in the normal condition. The myopic eye contains within itself elements of disease, and must always be looked upon with suspicion until time has proved it to be physiologically sound and trustworthy. This notwithstanding, popular belief has always credited myopia with many advantages, and has persistently declared that short-sighted eyes are good, that they improve as age advances, and that at no time will they require spectacles for reading. Never were more fallacious statements made, and unfortunately—in spite of the bitter regret of many who have been deluded into believing them—they are still being repeated to a credulous public. No doubt there are many cases in which myopia amounts to nothing more than an error of refraction, and where, apart from the inability to see distinctly in the distance without glasses, it causes no serious trouble; but, on the other hand, the myopia may steadily progress until the deeper structures of the eyeball are overtaken by incurable disease. No sharp line separates the two groups of cases. The one passes by easy and insensible gradations into the other; nor is it easy to determine why it is that in one person short-sight remains stationary, while in another it increases with alarming rapidity, and terminates in blindness.

The degree of myopia, considered in relation to the age of the patient, is probably the best guide we possess in forecasting the probable course to be followed in individual cases, and the arrangement of the short-sighted into groups, according as the myopia is low, moderate, high, or very high, possesses many clinical advantages. In myopia of low degree, the far point of distinct vision may be anywhere between the horizon and 20 inches from the eye; of moderate degree, somewhere between 20 inches and 10; of high degree, between 10 inches and 4; of very high degree, any distance nearer than 4 inches. Those who suffer from myopia in its higher degrees generally present a very characteristic appearance. They have large and prominent eyes with dilated pupils, and an inattentive, dreamy expression. When they enter a room full of people they have difficulty in recognising their friends, and, in order that they may see more distinctly, they screw up their eyelids and incline the head forward. Myopes at all times require to make a conscious effort in order to see clearly; and, when they are engaged in prolonged close work, the excessive degree of convergence necessary to secure distinct vision brings about fatigue of the internal recti muscles, which, sooner or later, become unequal to the duty imposed upon them. At first, sight is quite good, but soon the eyes begin to feel drawn and uncomfortable, the print appears unsteady, and the letters seem to dance about the page. This state of matters is followed by an aching pain in the brow and back of the head, and by a feeling as if the eyes were being pushed violently forward, and had become too big for their sockets. These symptoms grow worse and worse until double vision is induced, and then the patient, if he wish to continue his work, has to close one eye. Usually by this time, however, the eyeballs are suffused with tears, and, in consequence, vision is so indistinct that it is impossible to persist longer in the effort.

The diplopia is obviously due to the inability of the internal recti muscles to maintain the excessive convergence demanded, and, as a rule, Nature by and by steps in and puts a stop to the work of one of the eyes—generally of that which is the more deficient. This produces relief, but at the cost of sacrificing binocular vision, and of inducing the deformity of a divergent squint. Nor in myopia is it only the nerves and muscular arrangement concerned in the maintenance of binocular fixation which suffer, for pathological changes, leading to very serious consequences, are apt to occur in the interior of the eyeball itself. Intra-ocular mischief should always be suspected when, in addition to the symptoms previously described, the patient suffers from recurrent inflammation of the lids and conjunctiva, and from a sense of fulness and burning heat in the eyes themselves; and danger is usually imminent when there are also complaints of muscæ volitantes, and of subjective flashings of light.

Ophthalmoscopic examination shows that all these changes are due to inflammation of the choroid, at the posterior pole of the eye. In most cases of myopia the optic disc is bounded on its temporal side by a typical crescent; and, when the disease is non-progressive, this is, as a rule, surrounded by a well-defined line of black pigment. Whenever the short-sightedness begins to increase, the ophthalmoscopic picture is altered—the crescent loses this well-defined border, and merges itself in a general thinning of the adjacent choroid. These inflammatory changes lead to weakening of the overlying sclerotic, which, yielding to the force of the intra-ocular pressure, bulges backwards to form a posterior staphyloma, the mechanism of whose production is in all respects identical with an ectasia in the ciliary region due to prolonged anterior sclerotico-choroiditis. The enlargement of the eyeball, once started, knows practically no bounds; for, unless it be arrested by treatment, the choroiditis is steadily progressive. The myopia then passes from its innocent to its pernicious form, and its further course is marked by the occurrence of intra-ocular changes, all more or less destructive to sight. If the progression of such a case be watched by the ophthalmoscope, atrophic and pigmentary patches become visible in steadily increasing numbers, while retinal hæmorrhages are of frequent occurrence. These changes are at first most marked in that part of the fundus situated between the optic disc and the macula; but, by and by, they become general.

The most serious damage to sight, however, occurs when the macula itself is implicated. When this important region is threatened, the patient complains that the outlines of objects are broken and irregular, and that the faces of friends are so distorted that it is painful for him to look at them. Metamorphopsia is always of serious omen. It is due to disturbance of the regular arrangement of the cones by inflammatory exudation, and its appearance is usually the forerunner of a complete loss of direct vision, the result of increasing choroiditis or of retinal hæmorrhage. Scotoma, similar, but of less consequence, and due to the destruction of localised areas in the layers of rods and cones, occur also in other parts of the field of vision. Such extensive implication of the choroid leads to serious impairment in the nutrition of the eyeball. Floating bodies appear in the vitreous, which, by and by, loses its gelatinous consistency, and becomes fluid. The development of the staphyloma goes on apace, and, as it bulges backward, it drags and twists the optic disc; while the retina, displaced by inflammatory exudation from the choroid, and deprived of its natural support, owing to the fluidity and shrinking of the vitreous, becomes detached. Nothing more serious can befall an eye than detachment of the retina, and, unfortunately, in pernicious myopia this is not uncommon. It may occur suddenly, during a fit of coughing or of vomiting; but, as a rule, muscæ volitantes and metamorphopsia, accompanied by flashes of light, give premonition of its onset.

The lens suffers also. It may become cataractous, and, as a result of the stretching of its ligament, it may be dislocated by any trivial injury. In the course of ordinary choroiditis the appearance of cataract sometimes marks a favourable turn in the disease, and its extraction may be attended by the happiest results; but in high myopia cataract begins, as a rule, in the posterior pole of the lens, is of dark colour and matures slowly, and the operation for its removal is attended by considerable danger, as the fluidity of the vitreous, and the diminished intra-ocular tension, indicate a special vulnerability of the parts concerned.

In considering whether anything can be done to arrest the progress of pernicious myopia, it is necessary to take into account the causes that contribute to its production:—

1. *Influence of heredity.*—It is sometimes said that it is safer to inherit short-sight than to acquire it, and undoubtedly there are families, many of whose members are myopic and yet suffer no further inconvenience from their eyes than the necessity of wearing glasses to see distant objects. Their eyes are large from before backwards, but, apart from an increase in size, show no signs of structural defect. The influence of heredity, however, does not confine itself to simply determining the size and shape which an eyeball will assume, but extends to the ocular tissues themselves, endowing them with certain characteristics, whereby they are either strong and resist the inroads of disease, or weak and succumb readily to its attack. If that were not so, it would be difficult to explain the occurrence of progressive myopia among those who being illiterate have never used their eyes for any kind of near work, or who have spent their lives vegetating in the country. Whatever may have been the determining cause in such cases, it is very probable that there has been a strong hereditary predisposition, rendering the ocular tissues so intrinsically weak that they readily yielded to the slightest strain.

2. *Influence of eye-strain.*—It is a matter of common

observation that to overtax the eyes for long periods with fine work leads, sooner or later, to ocular troubles, if not to serious defects of sight. The evil seems to be due, in most cases, to excessive convergence; for those who, like watchmakers, work with one eye only rarely make complaint, while those working less constantly, it may be, but employing both eyes, are frequently affected. The amount of risk connected with the performance of any kind of minute work requires us, if we are to arrive at a correct result, to take into consideration not only the refraction of the eyes, but also the general health and strength of the patient. Nor is this a matter of mere theory, for statistics clearly establish that myopia is induced by close and continuous application of the eyes for near work. The examination of a large number of school children showed that myopes, although they were present in all schools, were far more numerous in high-grade schools than in elementary, and that in the former the percentage of short-sighted scholars was much greater among the seniors than among the juniors.

3. *Influence of age.*—During the period of active growth the eye should increase in size proportionately with the body; but slight variations may take place, with the result that an eyeball, which was in infancy slightly hypermetropic, may, at the age of puberty, be emmetropic, and may, when full growth is reached, be slightly myopic. Myopia, indeed, is rarely detected before the eighth year, and, as a rule, makes its most rapid advances between the twelfth year and the eighteenth. Influence of age, however, must always be considered in relation to the degree of the short-sightedness, because, as a general rule, it may be said that the higher the myopia the more likely it is to be progressive. Consequently, what might in an adult cause no anxiety, may, in the child, occasion serious concern.

4. *Influence of health.*—If the chief anatomical causes of the difficulties incident to progressive myopia are fatigue of the internal recti muscles and a want of resisting power in the ocular tissues, it may be taken for granted that a powerful influence either for good or for evil is exercised by the state of the general health. Common experience teaches that myopia, especially in children, often becomes progressive subsequent to an attack of measles or scarlet fever; that in adults any chronic disease or other debilitating influence may determine malignancy in a case which, earlier in life, was supposed to be of an innocent nature; and that women, whose general health is for the time being disturbed by the occurrence

of the menopause, are the worst sufferers from the complications of pernicious myopia.

All these influences may be intensified by other causes which may be looked upon as subsidiary. Of these I may mention:—

(*a*) *An improper position when at work.*—No one ought to be allowed to read or write with his body thrown over the desk and his nose almost touching the paper, for such an attitude causes congestion of the blood-vessels of the head, and, in consequence, encourages these very changes in the choroid which we are most anxious to avoid.

(*b*) *Want of proper light.*—One of the boasts of the myope is that he can see with less light than other people, and, consequently, he is often found reading in the twilight, or while sitting on a rug before the fire with no more light than comes from the flickering coals. Acts such as these must certainly encourage a tendency to progressive myopia.

(*c*) *Astigmatism.*—If a young child, fond of books, suffers from a low degree of hypermetropic astigmatism, prolonged reading is very likely to give rise to spasm of the ciliary muscle, and, in addition to the symptoms summed up in the word asthenopia, there is indistinct vision in the distance. This short-sight, however, comes and goes, is always worse after continuous use of the eye for near work, and is obviously due to the increased convexity of the crystaline lens brought about by contraction of the ciliary muscle. If any doubt exists as to the diagnosis of this condition, it will at once be removed by the use of atropine, the effect of which is to restore the static refraction of the eye. If, on the other hand, this myopia be unattended to, or, what is worse, if it be wrongly interpreted, and the patient advised to wear concave glasses, it then becomes a most important factor in the causation of true myopia. The constant irritation kept up in the choroid by the over-action of the ciliary muscle necessarily leads to congestion, and this is further aggravated by the habit which the child soon acquires of holding its book close up to the face.

These are just the very conditions under which myopia is most likely to become progressive, and as they come into play when the tissues of the eyeballs are weak from rapid growth, there is little wonder that changes are set up whereby the hypermetropic child becomes short-sighted to a greater and greater degree as its development advances. A similar condition of matters is brought about by the irregular astigmatism due to nebulous opacities of the cornea, the result of past ulceration, or in cases where, from malnutrition, the cornea has changed from the spherical to the conical shape.

In the treatment of myopia two indications must always be kept in view:—First, to enable the patient to see distant objects, and, second, to prevent the onset of choroiditis, or to arrest its progress if the disease has already begun. The aim of all therapeutics is to restore the abnormal to the normal, and although the surgeon cannot change the shape of the myopic eye, he can, by means of lenses, alter the conditions under which it works. In the emmetropic eye images of objects at infinite distances are accurately focussed on the retina without any effort of accommodation. It is only when reading or writing or any kind of near work is engaged in that the action of the ciliary muscle is required. The myopic eye differs from the emmetropic in having no power within itself to see objects at infinite distance, and as its far point is in most cases within the working distance, it does not require any effort on the part of the ciliary muscle to enable it to adjust itself to reading or writing. The clear therapeutic indication then is to provide the myopic eye with a glass of sufficient power to enable it to see at a distance when in a state of rest, and also to render it necessary for it to exercise its accommodation when it is used for reading or writing.

Light reflected from objects at infinite distance reaches the eye in parallel rays, which, after passing through the dioptric media of the emmetropic eye, come to a focus on the retina.

For practical purposes 20 feet is looked upon as a sufficient distance in which to obtain parallel rays. It is obvious, therefore, that as such rays on passing through the myopic eye come to a focus in front of the retina, the source from which they come must be made to appear nearer to the eye than 20 feet. The nearer it is made to approach the eye the more divergent are the rays reflected from it, and it will become visible to the myopic eye at the point where the rays are sufficiently divergent to be brought to accurate focus on the retina. A glass which will enable a short-sighted person to see in the distance must be, therefore, one which will render parallel rays divergent, and thus make the myopic eye optically equivalent to the emmetropic eye. As to the use of spectacles for this purpose, the surgeon has, as a rule, the hearty co-operation of his patient, who now, perhaps for the first time, realises what it means to see in the distance. When, however, it is explained that the glasses are also to be worn when reading and writing are engaged in, objections are frequently raised, because no difficulty has ever been experienced in seeing near at hand. Indeed, if the lens prescribed corrects the myopia, it may, in the first instance, cause difficulty when it is used for reading: up till now there has been no need to exercise the power of accommodation, and the ciliary muscle, weakened from disuse, resents this prompt call to action. Moreover, as concave glasses diminish the size of objects, myopes invariably say that when they wish to see anything minute they take off the glasses and hold the object close to the eyes. In this lies the crux of the whole matter, and it must at once be explained to the patient that he is asked to wear glasses for reading, not that he may see the print better than he can with his naked eye, but that he may be enabled to hold his book at a proper distance from his face. In short, the only object aimed at in prescribing spectacles for reading is to prevent the patient from sitting with his head bent down over the paper, and his eyes closely converged on the print. This faulty attitude is a great evil, and, if the danger of progressive myopia is to be met and overcome, it must be counteracted.

It is always necessary to explain this fully to parents, many of whom have a deeply-rooted prejudice to the use of spectacles by their children, and often urge all manner of objections against it. In truth, however, the earlier a myopic child begins to wear glasses the better; and if it wears them constantly, as directed, it is not nearly so liable to suffer from the consequences of myopia as another who has worn spectacles only intermittently, and never at all for reading. Their use for distant objects helps the child, by permitting it to see what is going on in the world around it, and thereby enabling it unconsciously to improve its education; and yet, important as this is, it is still more important that, in order to counteract at as early a stage as possible all tendency to excessive convergence, the spectacles should also be worn for near work. It is always a difficult thing for those who are grown up to begin to wear concave glasses for the first time, because the new conditions under which the ocular muscles are called upon to work are sure to give rise to much discomfort. Such persons are startled by the distinctness with which everything is seen, and speak of objects as being painfully bright and near.

For people suffering from high myopia, usually complicated by typical changes in the choroid, it is very difficult to prescribe helpfully. Their story is that the short-sight has existed since childhood, but that their parents would not allow them to wear glasses, and that they have only at last sought help on account of increasing short-sightedness, and of inconvenience experienced from indistinctness of sight, especially when they are away from home. Acuity of vision, usually less in the myope than in the emmetrope, is in such cases so markedly reduced that it is impossible, even when the macula itself is not implicated, to bring the vision up to the normal standard. The glasses which give the best results are prescribed, but in a few weeks the patient returns to say that the spectacles are of no use, as he sees fully as well without them. It is with our brain as well as with our eyes that we see, and these patients have become so accustomed, from long practice, to interpret blurred images conveyed to the brain from the retina that when, by the help of glasses, distinct images are formed, the effort to understand them confuses the brain and causes mental discomfort. When, however, such a person is removed from his familiar surroundings, he appreciates better the help which the glasses afford him, but, as a rule, he never admits that he feels comfortable when he wears them, and consequently, in most instances, he just goes on as he was doing, regretting more and more that he was prevented from wearing glasses at a time of life when eyes and brain alike would readily have adapted themselves to their use.

It would be well for parents, and for the public generally, to realise that no harm, but, as a rule, much good, follows the proper correction of an error of refraction. In children, the weakest concave glass that enables them to see clearly in the distance ought also to permit them to read and write; but when advice is not sought until adult age has been reached, the ciliary muscle has from disuse become weak, and the power of accommodation is insufficient to permit of the use of the same glasses for reading and for looking at distant objects. In such cases, it is necessary to prescribe two pairs of spectacles, a stronger for more distant, and a weaker for nearer, work. In the short-sighted, as well as in others, the advance of age brings with it a lessening power of accommodation, and so, as presbyopia develops, the myope with one pair of glasses finds that he requires to diminish their strength for near work, just as an emmetrope of the same age requires to wear convex glasses for reading. The inconvenience of having to wear two pairs of glasses is very considerable, and a lens which serves for both distant and near work is a distinct advantage. Of all the forms of bifocal glasses, the Börsch lens seems to be the one which combines most advantages with the fewest disadvantages. In it the reading lens, which is composed of flint glass, is embedded between two other lenses of crown glass, and these make up the strength required for distance. When diplopia is complained of, or when, in the course of examination, heterophoria is detected, the use of prisms may afford relief, but it must always be remembered that the occurrence of diplopia indicates that the ocular muscles are fatigued. In most cases, it is wise to interpret the double vision as a danger signal, set up by nature to warn us to examine thoroughly into the whole condition of the patient's health and strength.

The treatment of myopia cannot, however, be summed up in a prescription for spectacles. It resolves itself largely into a question of the best means of promoting the general health. In the management of a young myopic adult, the eye specialist must call to his aid the careful exercise of all the best qualities of a wise physician. Everyone of the troubles and dangers incident to the disease owes its origin to, and is explained by, the occurrence of choroiditis, and as this may be influenced by constitutional causes, as well as by the mechanical and other effects due to the conditions incident to myopia, a careful estimate should, at the very outset, be made of the state of the patient's health as a whole, and if any constitutional disorder be discovered, it should be dealt with by appropriate remedies. Everything must be done in addition, by means of good food, fresh air, and nerve and blood tonics, to increase the patient's strength. In the case of the young, school work ought to be strictly supervised, and all protracted use of the eyes prohibited. Periods of work must be alternated with periods of play, and the play ought to be much in excess of the work. Great watchfulness is necessary to see that the child wears its glasses constantly, that it sits erect at its work, holding the book at a proper distance from the eyes, and that it never requires to read or write in an insufficiently lighted room, or to use badly printed books. If there be any threatening of choroiditis, all close work must be given up and the eyes protected from strong light by smoked glasses, every encouragement being given to the child to spend as much of its time as possible in open-air pursuits. Such children tend far too much to interest themselves in sedentary amusements, and are too little inclined to join their companions in outdoor recreations.

Lastly, it is most essential, in every case where the myopia is suspected to be progressive, that the child's eyes be examined at stated intervals, for only in that way is it possible to ascertain with certainty whether the short-sight be, or be not, increasing. In addition to this, however, the inflammation of the choroid requires to be treated actively, because it is rare to find a myopia which has commenced with pathological symptoms get well of its own accord. If congestive and inflammatory changes be acute, the patient must be made to rest in a darkened room, leeches applied to the temples, and the bowels and liver acted upon by saline laxatives, and by an occasional dose of calomel. Cases of this kind are often benefited by vapour baths, and when intra-ocular tension is high, and the patient complains of pain and discomfort in the eyes themselves, speedy relief is often obtained by the use of eserine or of pilocarpine, or by paracentesis of the aqueous chamber. Such acute cases are not, however, often met with. It is more usual to find that choroidal inflammation has wrought considerable damage without having produced any symptom acute enough to arrest the attention either of the patient or of his friends. It is more likely that the fundus oculi will, if the patient be an adult, present changes indicative of inflammation of a chronic type, and in such cases a combination of iodide of potassium and nux vomica has always been a favourite remedy, while saline and alkaline laxatives, such as the waters at many of the mineral spas, are usually to be recommended.

These are the cases in which the macula becomes involved. A patient, formerly able to read and write, may suddenly find himself, on account of the twisted and distorted appearance of the letters, totally unable to do so; or, if the macula has been destroyed by hæmorrhage, the spot at which he looks directly may be a perfect blank. These cases are always of unfavourable prognosis, but of recent years many of them have been considerably benefited by the use of sub-conjunctival injections of sterile solutions—salts of mercury or chloride of sodium. Quite recently I was consulted by a gentleman, between 50 and 60 years of age, who, three weeks before I saw him, suddenly found that he had become unable to read or write. All his life he had worn spectacles to enable him to see in the distance, but his practice in reading was to dispense with the glasses and to hold the book close to his eyes. He was very highly myopic, and ophthalmoscopic examination showed, in addition to widespread choroidal changes in the fundus oculi, distinct disturbances in the macula itself. Both eyes were equally bad, but the patient, on being questioned, admitted that for some weeks before he became totally unable to read he had suspected that there was some unusual defect in the right eye. He was ordered to keep to bed continuously in a darkened room, and sterile saline solution (beginning at 4, and increasing up to 10 per cent) was injected sub-conjunctivally every second or third day, with the result that the condition of the right eye rapidly improved. The metamorphopsia in the left, however, still continued, so for this eye the saline solution was stopped, and one containing cyanide of mercury substituted. The result was eminently satisfactory, and when I saw the patient for the second time, five weeks after his first visit, he was able to read the smallest print without any difficulty. Such success is not, however, always attained, and although the same lines of treatment are applicable to cases where the retina has become detached, and bring about equally favourable results, yet there is always the fear that the improvement may prove transitory, and that the detachment may recur.

There is also an operative treatment for myopia. Where, after reading, the patient complains of the symptoms described in the earlier part of this lecture, or where the difficulty in reading has become very extreme and has not been relieved by glasses, it may be necessary to try to bring about an improvement by operating on the ocular muscles themselves. This may be done either by tenotomy of the stronger muscles, or, preferably, by advancing the tendon of the weaker. Any such operation, however, must not be undertaken until every opportunity has been given for the recovery of the balance of muscular power by the promotion of an improved condition of general strength.

It has long also been known that short-sighted people who suffer from cataract are sometimes, after the lens has been extracted, able to see without glasses. This suggested a quick and easy way to restore vision in high myopia, so, many years ago, it was proposed, in cases of extreme short-sight, to diminish the refractive power of the eye by the removal of the lens. It is one thing, however, to extract a cataract which is mature, and quite a different thing to interfere with a transparent lens.

This operation was strongly opposed by such high authorities as von Graefe and Donders, and practically nothing had been heard of it for many years, until, quite recently, Fukala brought it again into notice by publishing a series of successful cases, and since then it has been looked upon as a recognised procedure in ophthalmic surgery. Obviously, this operation is suitable only in myopia of very high degree, and in cases where the changes in the choroid have not already been such as to seriously interfere with sight. When successful it is undoubtedly a great boon to those who cannot get spectacles strong enough to help them, or who are so situated that it is inconvenient for them to wear glasses. It is most likely to succeed in young adults where the lens is soft, and can never be attempted in persons over 40 years of age without very grave risk. My own experience has not been by any means so favourable as that of many others. One of my earliest attempts was also one of my most successful, and after the lens became absorbed the patient, a young lad, was able to see distant objects, whereas, before the operation, he was so short-sighted as to be, to all intents and purposes, blind. Within a year of the time of the operation, however, detachment of the retina occurred, and the eye is now sightless.

To dwell further on the operative treatment of myopia would, however, lead me far from the theme proper of my lecture to-night; for it must not be forgotten that the diseases of the choroid and of the retina which complicate extreme short-sight are, in their pathological aspects, in no way different from those which occur under other conditions. If there be any distinction, the prognosis in myopia is probably more unfavourable. Modern methods of treatment can, undoubtedly, accomplish much, where, in former days, nothing whatever was attempted, and recorded successes encourage us to look to the future with expectancy and hope. It is, however, the personal experience of the surgeon which must, in the long run, determine his course of action, and I confess that the older I grow, the more impressed do I become with the risks and the dangers attendant upon surgical interference in pernicious myopia. What I should like to insist upon most earnestly is prophylactic treatment in its broadest and most general sense. The serious intra-ocular changes which accompany progressive short-sight often make considerable advances before they indicate their presence by any subjective symptoms which arouse the patient's concern, and in this silent progress lies the greatest danger. In the interests of the rising generation, therefore, there is nothing within the range of ocular hygiene that more deserves the attention not only of medical practitioners, but also of parents and of teachers, than wise attention to those under their care who suffer from short-sightedness.

CASE OF LUPUS VULGARIS OF TEN YEARS' DURATION SUCCESSFULLY TREATED BY THE FINSEN LAMP.

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WHEN so much is being said and written about the Finsen treatment of lupus, the following case seems worthy of being put on record, as the result obtained was most satisfactory, although the disease had existed for more than ten years, and during that time the patient had been subjected to many different methods of treatment.

Mrs. M., æt. 40, began, in the spring of 1891, to complain of severe pain in the right eye and ear. The pain was unaccompanied by any signs of inflammation, and was described as "neuralgic." It lasted for several weeks, and after it ceased the pre-auricular gland of the same side was noticed to be enlarged and inflamed. An exploratory incision was made into the gland, but no pus was found. The wound, however, did not heal, and the surrounding skin became affected with lupus, which steadily spread downwards, until it involved the greater part of the cheek. At different times the disease was treated by scraping, and by cauterisation with many different escharotics, and, lastly, for a number of weeks the *x*-rays had been regularly applied. In addition to these means everything was done to promote the patient's general health by constitutional remedies—nourishing food, and residence in the country or at the seaside. In spite of all this, however, the disease continued to progress, and although slight improvement was now and again manifest, relapse speedily followed. The condition of the patient, when she came under my care on 24th October, 1901, is depicted in the photograph (Fig. 1, p. 96).

One of her chief complaints at this time was that, on the slightest exposure to cold, or on any attempt to read, the right eye watered profusely. This epiphora was evidently due to displacement of the lower punctum, and consequently its relief was wholly dependent on the cure of the lupus. The eye was examined and found to be normal, but during the examination the patient volunteered the statement that, on several occasions after she had been subjected to the action of the *x*-rays, she was troubled with dimness of vision, and it was then observed that the right pupil was widely dilated.

As the diseased surface was covered by thick crusts, the patient was instructed to apply starch poultices. By next day the crusts were completely removed, and the parts were in a condition suitable for the commencement of the light treatment.

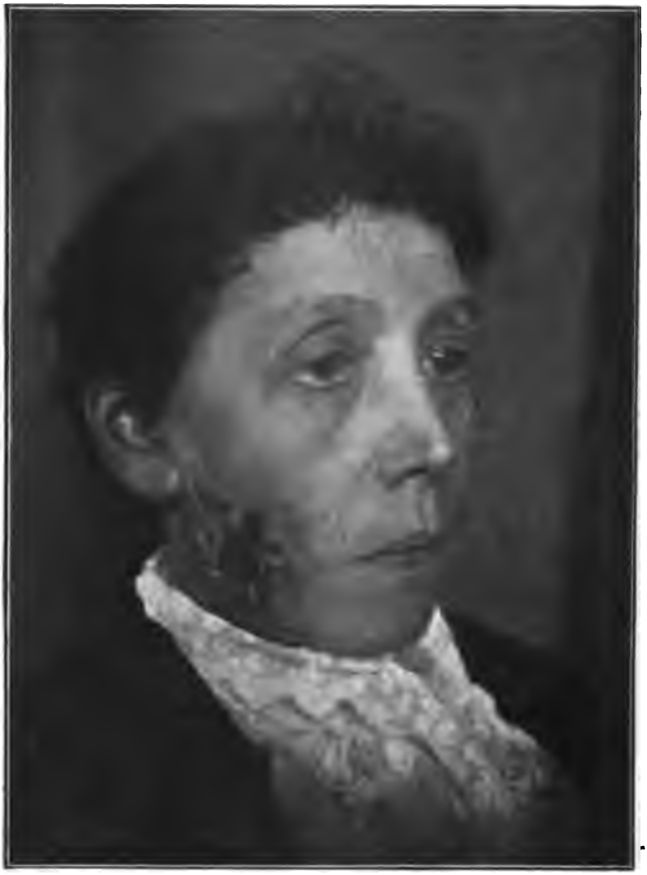

FIG. 1.
(From photo. by Dr. Hugh Walker.)

The lamp employed is the modification of the Finsen lamp recently introduced into the London Hospital. It consists of a hand-fed arc lamp, with carbons so arranged that as much light as possible is thrown towards the patient, who sits close to the lamp. The part to be treated is firmly pressed against the lens, which is made of quartz, and is kept cool by a constant flow of water.

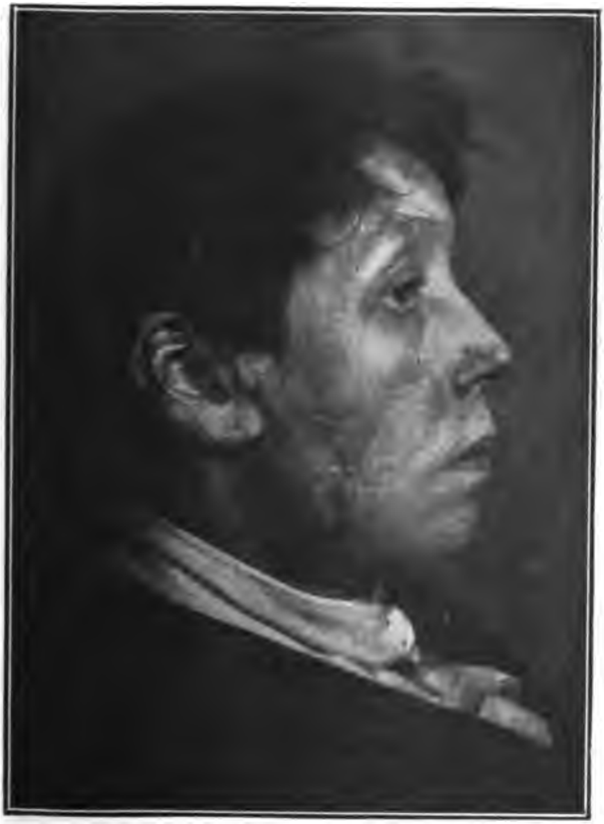

Fig 2.
(From photo. by Dr. Hugh Walker.)

The advantage of the present lamp over that originally designed by Finsen, is that the patient can be brought so closely to the source of light that the time occupied in the treatment is ten to fifteen minutes, instead of an hour. Moreover, the area treated at one time is much larger, and much less current is used. The lamp is fed from the Corporation mains, and by means of an adjustable rheostat and ammeter the current can be varied from 6 to 13 amperes at the will of the operator.

During the application the patient experienced no discomfort, but the parts to which the light had been directly applied presented all the appearance of severe sunburn. This treatment was repeated at regular intervals, care being taken to allow the reaction consequent on one application to pass completely away before the patient was again exposed to the influence of the light. The treatment extended over a period of six weeks, during which the light was applied twelve times. After each sitting, marked improvement was observed, and as the lens employed measured 4 cm. in diameter, it was an easy matter to cover speedily the whole area involved in the disease.

The second photograph (Fig. 2, p. 97) was taken on 14th December, 1901, after the treatment had been stopped for a fortnight, and shows that, with the exception of a linear scar, the originally affected part is smooth and almost normal in appearance. This scar, however, is not lupoid in origin, but is the result of an operation previously undertaken for the removal of the disease, and, in consequence, the light has had little or no effect upon it.

The success of the above case is most gratifying, and even should a relapse occur, one feels justified in predicting that the disease will be again overcome by the therapeutic action of the light. A very limited experience, however, serves to show that, although all cases of lupus do not yield to the influence of the Finsen treatment, still, in the electric arc lamp, properly applied, we have a means at our disposal calculated to render invaluable service in many cases in which all known remedies may have been tried and found wanting.

ON SOME PRACTICAL DETAILS OF SANATORIUM TREATMENT.

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THE "open-air" treatment of consumptives is a subject which has of late been prominently brought before the profession, both in this and in other countries. Not only so, but the public fancy has taken firm hold of the idea, and everywhere we hear of the intention of building sanatoria—municipal, county, or private—for the care or cure of our consumptive citizens.

How has all this come about? To begin with, the treatment is no "fad." It has proved its worth even in our own much maligned British climate, and stood thus far the test of time. There is no doubt about its efficacy in selected cases, and it is a cure which has come to stay.

How is the "open-air" treatment carried out? Most of us know the cardinal principles—continual life in the open air, abundant feeding with plain nutritious diet, and regulated rest and exercise. But as regards the actual details of sanatorium treatment, our ideas are in many cases vague. And yet, upon the carrying out to the letter of these details, success or absolute failure in any given case undoubtedly depends. As one who has personally gone through the ordeal of treatment, as well as being latterly attached to the resident staff of one of our largest English sanatoria, I have thought some of the points of treatment might be interesting, as well as useful, to many in general practice who have not had the same opportunities for observation as myself. I think I am safe in saying that there is no practitioner in this country who has not at least one consumptive under his care; the time has come when every such patient should have the benefit of this treatment so far as it is possible to carry it out.

And, first of all, let me remark that sanatorium treatment is not as simple as it looks. It is simple, and yet complicated. It has been called "an elaborated system of commonsense," and with this description I cordially agree. Let us take what I have termed our cardinal points *seriatim.*

1. *Open air.*—It is an essential of the treatment that the patient should live constantly in the open air, summer and

winter, day and night. He must have pure air, and plenty of it. Get him out of the city into the country where he can breathe the pure breath of heaven. There is a good deal in the selection of site. It has been said that cases will do well anywhere, even in the bogs of Ireland; but for any sake do not let us plant a man in a bog if we can put him on a sheltered hillside. Site means more than many people imagine if we are to have the best results. In this country a south to south-easterly exposure is preferable, as giving the maximum of sunshine with greatest shelter from prevailing winds. The advantage of a dry subsoil is apparent. Neighbouring woods, not in too close proximity to the building, are useful as affording cover in boisterous weather. For choice of a room I should prefer a small one, if having relatively larger window space to cubic capacity. Let there be no impedimenta to the entrance of air; casement windows with fanlight are best, and must be kept wide open night and day, except while dressing or undressing. If the windows are of the old fashioned type, they should be opened to their fullest extent, or in fine weather taken out altogether. Curtains and carpets are only in the way, and harbour dust. The floor may be covered with linoleum; this should be washed daily, and the walls and furniture likewise kept free from dust with a damp cloth. Let the furniture be of the simplest; a single bed with plenty of warm bedding, but no hangings; a small table; chest of drawers; and washing stand. These will be sufficient.

As regards the admission of fresh air, there must be no compromise; the windows must be kept open day and night in all weathers, and it is wonderful how soon even a delicate person gets used to this part of the treatment. Once disciplined to it the patient will not tolerate half-measures, and at once gets "air hunger" should the supply be in any way interfered with. Louvred shutters are occasionally of use to break the force of a gale blowing directly into a room, but in a sheltered situation are, of course, seldom required. I need not dwell here on the advantages of mountain air as regards purity or its effects on chest expansion; these points are already well understood. I would only repeat that an abundant supply of pure fresh air all day and all night is a *sine qua non* of the "open-air" treatment.

2. *Abundant food of good quality* is our second requirement. Phthisis, which means wasting, is a classical concomitant of the disease, and must be counteracted by full feeding. This is sometimes popularly expressed to the patient by telling him

he must eat three times as much as an ordinary man; one part to feed the body, a second to replace waste from disease, and a third to store up a reserve. This statement is, of course, somewhat exaggerated, but it is better to impress the patient as to the absolute necessity of feeding well than to err on the side of leniency. Nature supplies the fresh air; the physician can regulate the amount of rest or exercise to a nicety; but, as regards overfeeding, we must look to the patient for his heartiest co-operation. On no point does the prognosis more depend than this—Has the patient a good stomach? Cases of even advanced disease improve wonderfully if the gastric powers respond; early cases go to the wall if nutrition fails. The dyspepsia which so often accompanies phthisis may often be overcome by the will power of the patient; persuade him to feed even against his inclination, and, as the nutrition advances, stomach symptoms often subside. How can we aid the stomach in the process of digestion? The general rule in sanatoria is to give the patient three full meals daily, and to allow plenty of time for assimilation between each. An hour's rest *before* meals is an essential of treatment, and must be systematically carried out. The patient reclines on his bed or long chair in the open air, and during his "rest hour" should enjoy complete mental as well as bodily repose. Even conversation should be avoided. In this way he comes to table prepared for his task, and should take care to make his way honestly right through to the end of his meal. What is the nature and quantity of the food usually given? It must be plain, nutritious, and in abundance. Something like the following will serve as an example of what is required:—

Breakfast (8 A.M.).—Porridge and milk, bacon and eggs, or ham and tongue, or white fish, or sardines in oil, two slices of toast and butter, a cup of tea or coffee, and a glass of milk.

Dinner (1 P.M.).—Soup occasionally; 6 to 8 oz. flesh meat, such as roast beef, beefsteak, roast mutton, roast pork, rabbit and pork pie, or chicken and ham, with a good helping of potatoes and vegetables; a second course of milk pudding—such as rice, sago, tapioca, or suet pudding; bread and biscuit with butter and cheese; dessert of fruit or nuts several days weekly; at least two glasses of milk.

Supper (7 P.M.) is on much the same lines as dinner, but an endeavour should be made to give as much variety as possible on each day's menu. Fish or fowl is often given as a first course, and meat as the second; again, at least two glasses of milk, biscuits and butter, and, if desired, a small cup of hot coffee.

Altogether, about three pints of milk should be taken daily, a fair allowance of cream, and plenty of butter. A glass of hot milk first thing in the morning often helps to free the expectoration. Sauces served with food should contain a fair admixture of butter fat; pastry likewise. The fat of the meat must be eaten along with the lean.

I would put in a word here for variety of food. The patient's own wishes should be consulted, provided he gets a nutritious diet in full quantity. A good cook, who does things in a dainty style, is an invaluable aid to a poor digestion. Care should also be taken that hot meals are not served on cold plates, and *vice versâ*; some patients are easily put off their food.

Weigh patients weekly, and note progress. Care should be taken to weigh in the same clothes and about the same time of day. Increase of weight is not everything, but it is a point on the right side.

3. *Supervision of rest and exercise.*—This is our third cardinal point, and not the least important.

Pyrexial cases are, of course, kept strictly in bed till the temperature comes down, their room is constantly open to the outer air, and feeding is forced. Apyrexial cases are also best kept at rest, or, at least, should get very limited exercise, till an appreciable gain in weight is assured.

As regards exercise and its amount, we are guided by the thermic chart. The temperature is taken *per rectum* four times daily—say, on waking, at 12 noon, at 6 P.M., and at 9·30 P.M. The mouth temperature in the open-air treatment is absolutely unreliable; for cases with much pyrexia it might form an uncertain guide, but for slight pyrexial cases, in which the temperature is our criterion for regulating exercise, the oral temperature is often fallacious and quite untrustworthy. What temperature is our index of safety in allowing exercise? It has been found as a matter of experience that if the temperature be over 98·6° F. (37° C.) to 98·8° F. on waking, or over 100·4° F. (38° C.) at 6 P.M., exercise is contra-indicated, and the patient should be kept in bed till it comes down. If under these temperatures, exercise may be allowed, beginning with a short stroll of 100 yards on the level, and increasing it to several miles each forenoon. Hill climbing in suitable cases, under supervision, is desirable. The pace at first should be not more than 2 miles per hour. The patient must not get out of breath, and should avoid fatigue. He should keep out in the open air from about 9·30 A.M. till 12 noon, resting during the walk whenever necessary. After exercise the temperature should be taken *immediately* on return. If over 100·4° F. the walk has been too long, and should be cut down. The "exercise temperature" speedily drops, often half a degree to a degree after a few minutes' rest; to get a correct index it is, therefore, necessary to take it immediately on return.

Exercise should be taken no matter what the weather. Light warm clothing should be worn, and nothing surplus carried in the way of overcoat or mackintosh. At most, a light cape may be worn, but even this is discouraged at many sanatoria. The wind should be avoided, especially by cases with irritable cough; and the doctor must keep his eye on the weather-cock each morning, and direct the walk on the lee side of the hill or wood. The walks, to begin with, should be on the level; later, as cases progress, the patients should be sent up an incline on the outward journey, then take a piece on the level, and return downhill. The amount of exercise is regulated from day to day, and increased or diminished as necessary.

I have said that the temperature is our criterion for exercise; at the same time the physical examination of the lung from time to time, the presence or absence of hæmorrhage, the state of the pulse, and like factors must be remembered in each individual case. In suitable cases a further walk may be permitted between 3 and 5 P.M.; those not capable of this should be kept at rest in their chairs. Patients should retire for the night at 9 to 9·30 P.M., so as to have a good ten hours' rest.

I have now outlined broadly the three principles of treatment. Physical examination of the patient at regular intervals, continual observation of the thermic chart, and examination of the sputum, guide us as to the progress of the case.

Complications must be dealt with as they arise. In a well regulated sanatorium it is remarkable how seldom an accident, such as hæmorrhage, occurs. This and other complications, such as pleurisy, laryngeal mischief, diarrhœa, &c., must be dealt with on the usual broad lines. An occasional tonic as a fillip to digestion; the administration of a sedative, *e.g.*, codeia for irritable night cough; the application of counter-irritants to the chest; the use of the respiratory inhaler, or other local treatment for laryngeal trouble; these points need only be mentioned in passing. Drugs are never exhibited unless there is some distinct indication for them. In the "open-air" treatment it is remarkable how cough and dyspepsia disappear in most cases without adventitious aid.

And now, as to some of the minor details of treatment, although I cannot attempt here to treat them exhaustively.

Patients are provided with a thermometer and a Dettweiler or similar sputum flask on arrival. Spitting is strictly forbidden, except into the flasks or mugs provided for the purpose. The danger of infecting others is thus inculcated and provided against. To guard against auto-infection, the patient is also warned as to the danger of swallowing the spit. Flasks are collected nightly, and the sputa cremated or otherwise destroyed. Each room is disinfected before a fresh patient is admitted.

A cold or tepid *bath* first thing in the morning acts as a good tonic, and also increases the pulmonary circulation. Bathrooms should not be locked, and should have bell communication. Pyrexial cases should be sponged in bed.

Stimulants are, as a rule, forbidden.

Smoking may be allowed if no laryngeal complication exists, and if it does not interfere with the appetite nor induce cough; no smoking allowed during rest hour, nor whilst walking.

Visits from friends should be strictly limited, and only made with the previous consent of the resident physician. Business worries must be avoided. A man should enter on the treatment with a free mind, and concentrate all his energy on the idea of getting well. Letter-writing should not be too much encouraged. There are individual differences, and what may harm one does not affect another.

Reading is a great help in passing the time quietly; exciting reading should be avoided, as also anything like severe literary effort. In some sanatoria even light reading is prohibited, and in these cases I think Professor Clifford Allbutt's recent warning as to the mental vacuity induced should be taken to heart. Time often hangs heavily on the patients, and this brings us to the somewhat difficult question of amusements.

What *amusements* may safely be allowed in a sanatorium? Exciting amusements, or games which induce breathlessness, are, of course, debarred. The individual idiosyncrasies of each patient must also be observed. A quiet game of chess will do one man good, but send another up several degrees—a rubber of whist in the same way. Gambling occasionally creeps into a game among certain patients, and in these cases cards had better be prohibited altogether. Draughts and dominoes are quiet games, and may be allowed. Shooting with an air-gun or small-bore rifle may be permitted in suitable cases. Croquet is *par excellence* a sanatorium game for convalescing cases; half a round may be played to start with, and an eye kept on the evening temperature. "Clock-golf," in which the "putting game" is played round twelve holes corresponding to the figures of a clock, may be tried. No game should be started till one hour after lunch—say 2·30 P.M. Photography shares with croquet the attention of most patients; the "pocket kodak" is a most useful companion, and evades the necessity of a dark room. Films should be sent off for development, but may be printed by the patient. The subject of amusement is, in practice, a somewhat difficult one, and the patient must be prepared to at once forego any amusement which apparently tends to retard his recovery.

For purposes of rest the patient may retire to his room, or, in good weather, recline on the long chair in the garden. He should provide himself with a couple of light warm rugs for cold weather. Hammocks are objectionable, as tending to contract the shoulders; for the same reason I don't like the ordinary canvas sitting chair. The long deck cane chair, with suitable cushion, is the most serviceable, and should be placed in a sheltered corner. Patients are forbidden to carry their own chairs, or in any way over-exert themselves. In summer, a tent in the garden is a useful adjunct to treatment; the patient may, indeed, convert it into his ordinary dwelling-room. Revolving shelters, such as those provided by Messrs. Boulton & Paul, of Norwich, are likewise of great convenience.

Most sanatoria have electric light and radiator heating apparatus. Gas- and lamp-lit rooms must be avoided. A fire is cheery, but the temptation to sit over it must be guarded against.

I have now run over—somewhat cursorily, I am afraid—some of the principles and details of sanatorium treatment. I trust I have said enough to show that the open-air treatment is not the simple thing it looks. It is an education in itself, and I think the late Congress did well in passing a resolution that sanatoria are a necessary part of our procedure in the national crusade against consumption. Even in a well-appointed house, it is difficult to carry out the treatment at home. You may as well put a Greek primer in a lad's hand, and tell him to learn the language, as attempt to carry out sanatorium treatment without constant supervision. At the same time, I do not forget that sanatoria are as yet few in number. Good private sanatoria have not always a vacancy, and for the poor there is not one bed for a thousand ready to occupy it. In Scotland we have the Victoria Hospital in Edinburgh, and Quarrier's Sanatoria, Bridge of Weir, doing noble work; but there is a crying need for more of the same kind. It is sometimes forgotten that the sanatorium exists not only for the cure of the individual—it exists also for the prevention of infection to the many. All success, therefore, to the new movement recently inaugurated.

Obituary.

DAVID RAMSAY, M.B., C.M. GLASG.

DR. RAMSAY was born at St. Petersburg on 27th September, 1866, of Scottish parents, and died a martyr to professional duty on Monday, 6th January, of this year. He graduated at Glasgow University in 1888, and had been for a good many years in practice at Raunds, Thrapstone, Northamptonshire. At the inquest held on the 8th ult., two days after death, it emerged that while Dr. Ramsay was opening an abscess on a patient's foot on 7th December, the knife slipped, and the point of it went into the left fourth finger at the middle joint, making an indistinct puncture. Instead of cleaning the part at the time, Dr. Ramsay pressed his thumb on the wound and stopped the bleeding, but whenever he got home, he washed and thoroughly disinfected his hands. Pain set in in the wound the same evening. The finger, and ultimately the whole limb, became swollen. Sickness and vomiting continued almost incessantly for two weeks. Fully a week before death, the axilla was incised under chloroform, and for two days everything seemed well. But thereafter pleurisy and septic pneumonia set in, and death took place on the morning of the 6th. A verdict of "accidental death" was returned.

The funeral took place on Thursday, the 9th, and, according to the local newspaper, it is doubtful if the town ever witnessed so impressive a sight before. The procession reached almost from the house to the church, and everything seemed to show that the doctor had had an extraordinary hold on the affections and respect of his fellow-townsmen.

Dr. Ramsay was partner with Dr. W. Mackenzie, and had practised in Raunds for thirteen years, with the exception of a short break in the earlier part of that period.

CURRENT TOPICS.

GLASGOW AND WEST OF SCOTLAND MEDICAL ASSOCIATION ("GLASGOW MEDICAL JOURNAL").—The annual meeting of the Association was held in the Faculty Hall on the afternoon of Monday, 27th January. The President, Mr. H. E. Clark, occupied the chair, and there was a large attendance of members. The Treasurer's Report, presented by Dr. G. H. Edington, again showed a good balance at the credit of the Association. The most important business arose in connection with the resignation of the Senior Editor, Dr. Lindsay Steven, who had been officially connected with the *Glasgow Medical Journal* for twenty years, during the last twelve of which he had been either sole or joint editor. The Association gratefully recognised the profound obligations under which it lay to Dr. Lindsay Steven for his invaluable services, and appointed the President and Dr. Monro to draw up a minute putting this sentiment on record. Dr. Monro was then appointed Senior Editor, with Dr. Edington as Junior colleague. It was decided that Dr. Edington should continue to act as Treasurer. The office of Secretary, which had been held for a number of years by Dr. Lindsay Steven, was conferred upon Dr. Grant Andrew.

The following are the office-bearers for 1902:—

President, ...	MR. H. E. CLARK.
Vice-Presidents, ...	DR. ROBERT POLLOK. DR. W. K. HUNTER.
Editors, ...	DR. THOMAS KIRKPATRICK MONRO. DR. GEORGE HENRY EDINGTON.
Treasurer, ...	DR. GEORGE H. EDINGTON, 225 Bath Street.
Secretary, ...	DR. JAMES GRANT ANDREW, 12 Woodside Terrace.

General Business Committee.

DR. R. S. PENMAN, Paisley.
DR. ALEC R. FERGUSON.
DR. JOHN M. COWAN.
DR. JOHN ROWAN.
DR. WM. G. DUN.
DR. P. S. BUCHANAN.
DR. CHAS. WORKMAN.
DR. ARCH. YOUNG.

PREVENTION OF CONSUMPTION.—After prolonged and careful consideration of the policy to be adopted in the immediate future, the Council of the local Branch of the National Association decided at its monthly meeting on Wednesday, 8th January, to take steps towards providing a sanatorium for consumptives in the curable stage of the disease. It was agreed to co-operate, as far as possible, with the agencies which are already attempting to carry out this work. The problem is an enormous one, and the Council rightly intend to proceed with due caution; but it is hoped that, as the benefits conferred by the work of the Association become recognised by the community, it will be possible greatly to extend the operations.

GLASGOW SOUTHERN MEDICAL SOCIETY.—The ninth meeting of the session, and the first of the new year, took the form of a smoking concert, supper, and conversazione in St. Enoch Station Hotel, on Thursday, 9th January, 1902—Dr. John Stewart in the chair. There was a large attendance of members and friends, Supper was served at 9 o'clock, and thereafter an adjournment was made to another room, where the remainder of a pleasant evening was spent in song and story.

NEW PREPARATIONS, &c.

ASPIRIN, TABLOID BRAND (Burroughs Wellcome & Co., London).—Aspirin was introduced some years ago as a substitute for salicylic acid, of which substance it is a compound. It passes through the stomach unchanged, to be decomposed by the alkaline juices of the intestine. The tabloid is a convenient mode of measuring and administering the drug.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1901-1902.

MEETING IV.—15TH NOVEMBER, 1901.

The President, DR. W. G. DUN, *in the Chair.*

DISCUSSION ON "PNEUMONIA: ITS TREATMENT AND ITS NATURE."

Dr. Middleton said—It is not my intention to speak of that part of the subject which Dr. Dun has just referred to—the results of treatment—because I think hospital physicians are, perhaps, in the worst position for giving fair statistics as to the mortality of pneumonia; especially a physician in such an hospital as the Royal, an old institution, which we all know to be out of date in many ways. When you consider the class of cases that we get there, you are bound to admit that the mortality must be higher than it is in the hands of the general practitioner. We receive so many cases almost moribund. I have not statistics to offer, but I am quite satisfied that we all recognise the fact that a considerable number of those who are admitted are so extremely ill that no treatment that we can adopt can have any effect. Hence I am not prepared to look at the subject merely from the point of view of statistics.

What I wish to draw your attention to before speaking of the treatment is the nature of the disease itself. What is pneumonia? What do we mean by it? I am not going to occupy your time with any reference, of course, to physical examination and that sort of thing. What I want to speak of is our conception of the disease. The old idea was that it was an acute inflammation of the lung, a local affection, a simple inflammation of the lung. Now, I think it has long been held that this is probably not the case. And there are two very strong arguments against our taking that view of pneumonia. One of them, which was pointed out a long time ago, is the fact that the gravity of the disease does not depend upon the amount of lung affected. Of course, I make this as a broad statement. We all know that if a pneumonia passes from one lung to another, involves the whole of one lung and then passes on to the other lung, we know that the gravity of that case is greatly increased thereby. But, speaking generally, I am satisfied that I am right in saying that the gravity of the case does not depend upon the amount of lung tissue involved and disabled. Another proof of that is the fact that after all the symptoms have passed off, the fever gone, and all the symptoms that we treat—sleeplessness, restlessness, and so on—the physical signs may still remain for a week or more, so that the disablement of the lung already involved must still persist. For these two reasons, and for others which I need not specify, I am of opinion that the disease is not a simple local inflammation. The other view, the one that is, perhaps, now the most commonly held, is that it is a fever, that it is on all fours with the specific fevers, that the lung condition is neither more nor less than a local affection, similar, say, to the throat affection in scarlet fever or to the rash of fevers. There are many facts that support this view. One that strikes everyone, of course, is the self-limited nature of the disease. We can calculate that a case of pneumonia will last for a certain number of days; it is often spoken of as an eight-day fever. Now there is no other class of disease of which this can be said except the specific fevers. Then, again, the crisis, the sudden crisis, is exactly what occurs in specific fevers. I am sure you will all agree with me in saying that at the bedside, to the eye, the aspect of the pneumonic patient is exactly that of a patient the subject of one of the specific fevers, more especially typhus. This view of pneumonia has been before the profession for a very long time. I do not know that one would be right in saying that it is accepted, but it undoubtedly is the belief of a great many members of the profession and of a great many writers on the subject. In further support of the view came the discovery of the pneumococcus. Now, I am not inclined to attach too much value to that, for I do not myself regard it as proved to be the pathogenic cause of the disease. It, however, to some extent, supports the theory of which I speak, and in so far, therefore, I take it along with me, but I should not be a bit surprised if it turned out that there are several different forms of organism involved, for, looking over a large series of cases of pneumonia, one cannot help being struck by the differences amongst them, and it is quite possible that there is not one organism only, but several, involved in the infective process. In favour, also, of this view of its being a specific fever is the fact that it occurs in epidemic form. It is a disease that is endemic in the sense that it is always with us, but we all know that it bursts out in epidemic form occasionally. At the present moment, for instance, there is a very considerable outbreak of pneumonia in the city, and that, also, renders it more or less analogous to the specific fevers.

It is necessary, also, before proceeding to the treatment, to speak of the natural course of the disease. In the great majority of cases, it tends towards recovery. There is a very considerable proportion of cases in which, if the disease be left to itself, recovery will take place. In a considerable number, however, the tendency is towards death, and in regard to the question that is mainly to interest us to-night, we have to think how it is that this tendency takes place. What is the cause of death ? What is it that kills our pneumonic patients ? Well, one would look, of course, at the lung, in the first place, for the cause of death, and, no doubt, sometimes we find it there. But we all know, when we go to the *post-mortem* room after a death from pneumonia, and see the organs displayed before us, we often turn to the pathologist, and say to him, " What killed this man ? " It is an extremely common experience. You find a lung partially consolidated or breaking down, at anyrate in some stage of pneumonia, and beyond that nothing else. Now, the mere fact that half of a lung or the whole of one lung has been cut off from the respiratory function, is no reason why the patient should have died. We see the same condition frequently in pleurisy. We often have a large pleural effusion compressing the whole of one lung, which is thus entirely removed from the respiration, and yet we do not expect the patient to die from that. Again, we find cases of pneumonia, where the whole of one lung, and one lobe, say, of the other, may be involved, not at one moment, but the one after the other, and yet we may not have a great amount of anxiety as regards the issue of the case from beginning to end. There is something else than the involvement of the lung. There is always, if I may put it so generally, there is always enough of lung tissue left to carry on respiration, uninvolved by the pneumonic process. We next turn to the heart, and we say a great many of our cases die of cardiac failure, that is to say, the heart becomes weak, the weakness gradually increases until pulsation ceases, and it is said by some that this is due to the heart being unable to force the blood through the lung, that so much of the lung being disabled by the pneumonic process, the strain put upon the heart is too great for it, and failure takes place accordingly. That is not my view of it. I do not think that we have evidence of that during life, and certainly not at the *post-mortem* examination. We do not find during life evidences of dilatation of the right ventricle. Nor do we find evidence in the heart after death to indicate that the failure of the heart's action has been due to the cause that I have mentioned. It seems to me, then, that we must look elsewhere for the cause, both of the undoubted failure of the respiratory function and of the undoubted failure of the heart's action, which, between them, are the causes of death in almost all our cases of pneumonia. I think we must take it that the cause is the influence of the poison, which we assume to be present, on the nervous system, and through that on the other organs. In fact, it seems to me that a case of pneumonia is on all fours with a case of typhus, scarlet, or other fever; that the prognosis depends not so much upon the quantity of poison which is introduced into the system as on its quality. For, just as there are epidemics, say, of scarlet fever, in which all the cases are of a mild type, and other epidemics in which all the cases are of a severe type, so also in pneumonia epidemics vary; at one time a large number of cases will pass through your hands one after the other, and give you almost no anxiety, while at another time almost every case that you meet with is of a severe type. That, I think, can be accounted for only by the kind of poison, not the amount, that is introduced into the blood, *i.e.*, the virulence of the poison causing pneumonia varies, just as the virulence of the poison causing specific fevers varies, from time to time. That the nervous system is greatly involved in pneumonia is proved by various things. In the first place, we have the severe rigors which usher in the disease. Then, at a very early stage, we find severe headache and great sleeplessness and delirium out of proportion to the height of temperature present. Of course, if you have got hyperpyrexia, you would naturally expect to find sleeplessness and delirium, but what I hold is, that we see these occurring in pneumonia at an earlier stage than we do in other diseases characterised by pyrexia, and with a temperature which is not unduly high, a temperature of, say, 102° or 103°. Besides these, there is another sign that we often see during the course of pneumonia, I mean absence of the knee-jerks. This is also an indication of the influence of the disease on the nervous system. And, last of all, in those cases that prove fatal, very commonly coma supervenes. For these reasons, then, I am inclined to regard pneumonia as a specific febrile disorder, and as one in which the poison is sometimes so concentrated, so virulent, that nothing that we can do can prevent a fatal termination. The prognosis will, of course, also be affected by many circumstances which I do not think it is wise to touch on, for instance, the patient's age, or alcoholic habits, the presence of complications, *e.g.*, is the pneumonia the result of an influenza? is it complicated with Bright's disease, or cardiac disease, or anything of that sort? We also all recognise the fact that any departure from what is regarded as the normal course of a pneumonia is to be looked on as an alarming fact.

If this, then, is the essential nature of pneumonia, what is the treatment to be? Well, the only curative treatment that one could think of would be something to counteract the poison which I hold to be the cause of the disease. Possibly, in the future, some antitoxin may be discoverad to have this effect. In the meantime, nothing of moment, so far as I know, has been done in that direction, nor do I personally think that there has been any great encouragement in regard to antitoxin treatment, unless, perhaps, in the case of diphtheria. The principles on which we treat the disease, it seems to me, must be those on which we treat fevers. If I am right in my view of the case, it follows that the treatment must be simply that of a febrile disorder, a disorder which we know has a natural tendency to burn itself out within seven or eight days, and our object must be to maintain the patient's strength, so that the battle may be fought between the germs of the disease and the cellular elements in the patient's body. To maintain these cellular elements in their best fighting trim is what we have got to do. I have nothing, therefore, new to offer you with regard to the treatment of it. We treat it as we treat typhus—by rest, by fresh air, and by food. Fresh air I believe to be a very essential part of the treatment. In the Royal Infirmary we miss it very badly, and I think that, perhaps, to some extent, the want of space in our wards, the want of cubic space, has something to do with the very high rate of mortality which prevails there. Local applications may be of use in the early stage. If the patient has much pain, blister by all means, but I do not believe that by blistering the patient you will cut short the disease. I myself do not, as a rule, blister, but I have no objection to it, and I believe that it does relieve the patient, perhaps more rapidly than anything else, if the pain be acute, more especially if the pain be due to the pleurisy that so frequently occurs along with pneumonia. Personally, I may say that I still adhere to the old-fashioned habit of applying linseed poultices. It soothes the patient very much, it helps his cough, and I believe it does good at the early stages, but I do not carry it out to the end. I believe that, in some cases, ice poultices may relieve the pain and soothe the patient, as they will also tend to reduce the temperature. Personally, I do not use these applications, except when I seek to reduce a very high temperature. I give no routine treatment, for I do not give drugs unless I see some special occasion for them. The first drug that, as a rule, is required is a stimulant, and in a great many cases we do without that at all. In most young subjects, for instance, we do not require it. In most of the middle-aged, and all the old people, we have to use it, and in most of our hospital patients we have to use it tolerably early, but I venture to say that stimulants are used too largely. I think they are given in too big doses. I think there is a tendency to begin with three or four ounces of whisky, and, as the patient is advancing in the disease, and so, naturally, becoming worse, the tendency is to pile on the alcohol. I think it is apt to be carried to excess. The pulse should be extremely carefully studied to see the effect of the alcohol that is being given. When there is very great tendency to failure of the heart's action, I think the best drug we have at our hand is strychnine. I use digitalis occasionally, but I have more faith in strychnine for bracing up the heart to carry on its work than in any other drug I have ever used; but it must be given hypodermically. It does not seem to me to be of any service whatever, if given by the mouth in the ordinary medicinal doses. If you give $\frac{1}{50}$th of a grain of strychnine hypodermically, you will find an extremely good effect upon the heart's action. It may be, and probably will be, only temporary. Then repeat your dose in two, or three, or four hours. The largest dose I have ever, I think, had administered has been $\frac{1}{15}$th of a grain every four hours, but I have seen that act admirably in steadying the heart and pulling the patient through.

One of the most distressing symptoms that we have to deal with is sleeplessness and delirium, and I think that the treatment of this is, perhaps, the most responsible portion of the whole treatment of pneumonia. What are you to do when your patient is madly delirious and sleepless? Well, if that occurs early in the disease, I would not hesitate to give a dose of morphia by the mouth or hypodermically; a small dose, no doubt, but I would have no hesitation in giving it. Later on, however, I altogether avoid opium and morphia. I do not think it is safe to administer these drugs, because they seem to me just to reinforce the injurious influence of the poison of the disease on the nervous system. When a patient is fully under the influence of the disease, with great difficulty in breathing and an ineffective cough, giving him morphia or opium in any form renders the respiration much more difficult, and practically just kills him, so that it is only in the very earliest stage that I would use morphia. The drugs that we use are unsatisfactory. Chloral and bromide I still use sometimes. Paraldehyde, one of the more recent hypnotics, I have found extremely beneficial if given in sufficiently large doses —a drachm, or a couple of drachms, frequently requiring to be repeated every two or three hours until sleep is produced. More recently, in delirious cases, I have found that hyoscine hypodermic injections have been very beneficial. This drug, as you all know, has proved of service in many of our asylums with delirious and insane patients, and I have found it tolerably useful in pneumonia, but nothing that I have tried has given me absolute satisfaction. I still dread to advise what is to be done for a very delirious case, say, about the sixth or seventh day of the disease.

Cold applications and hot applications are sometimes, of course, of value, but this I do not dwell on. That, briefly, is the course of treatment which I generally adopt.

I have found no treatment that would abort pneumonia.

I have practically no experience of bleeding. It was out of date before my time, and I daresay those who, at one time, lauded it so very highly, must have had some good reason for giving it up as they did. At anyrate, we very rarely, indeed, see a case in the Royal Infirmary, in which it would be safe to bleed. We do not see them early enough, for one thing, and they do not belong to that robust class in whom alone, apparently, bleeding is advisable. I have seen—but many years ago—a pneumonia apparently aborted through the hæmorrhage that took place from confinement, recovery taking place on the third day of the disease immediately after the labour (at full term), whether due to the removal of the mechanical mass in the abdomen, or whether due to the loss of blood alone, I could not say.

Another method of aborting, or cutting short the pneumonia, that has been recommended, is digitalis. This is a recommendation from America, and the principle on which it is given is its power of slowing the action of the heart; the doses must be sufficiently large to keep the pulse constantly below 80. Such is the instruction, and the author of it I believe, went the length of stating that he would as soon expect to see a patient die of toothache as die of pneumonia, if treated with tincture of digitalis in these doses. I myself have never ventured to use the drug in that way.

Another remedy that I have used, and that is often spoken of as very beneficial in the treatment of pneumonia, is the administration of oxygen gas. I was very hopeful that this would be of great service, but I am sorry to say that, in my own hands, I have not found it at all successful. You get a temporary benefit from the administration. The patient's colour improves, the lividity passes off, but unless the oxygen is administered continuously, the improvement passes off immediately, so that I have not formed a good opinion of its value in the treatment of pneumonia.

You will see, then, that my standpoint is exactly what it was a considerable time ago. There is nothing new so far as I can tell you with regard to the treatment of pneumonia. It is a disease which will run its course, and can only be guided by us, not cured. I shall be very glad, however, if the result of this discussion to-night, is to bring before us any means which we can employ, and which will take away from us the anxiety which always comes with the treatment of a very acute and severe attack of pneumonia.

Dr. M'Vail said—Mr. Chairman, my first duty is to thank the Committee for doing me the honour of asking me to contribute my mite to the common stock of experience in connection with the management of pneumonia. Your Secretary, when he spoke to me on the subject, indicated very clearly that the desire of the Committee was that only one's own work—clinical experience—was what was wanted before the Society, so that the various speakers might tell each what he himself had seen and done. That view I have kept before me in the very brief time that I have had to consider what I should say to this Society to-night. As Dr. Middleton has urged, pneumonia is not limited to one form, but is of diverse forms. The ordinary lobar form, of course, we know well, but it is curious how varied the representations of pneumonia may be. For example, about three years ago I had a case of extreme severity as regards fever and as regards the constitutional symptoms, where only the most minute fringe of one lung was affected, and where the gravity of the case fell upon the spleen, where the spleen rapidly enlarged, until it was the size of a small cocoanut. I was very much tempted, indeed, to make a puncture and get a little out, but I desisted. The case recovered. Almost as a sort of reward for my abstinence from exploratory puncture there, an old alcoholic case came in, where, again, I found a very greatly enlarged spleen and but little pulmonary affection. The man died, and we then got the opportunity. Dr. Workman made the *post-mortem* examination, and the greatly enlarged spleen was loaded with the organism that we believe to be the cause of pneumonia. At the time of the *post-mortem*, there was not a vestige of pneumonic consolidation of the lung remaining. I remember astonishing Sir William Gairdner very much, by asking him what his experience was of *pneumonia of the spleen*. Another case of pneumonia, differing very much from the ordinary—at least, giving a development of pneumonia differing very much from the ordinary—was a boy who was in the ward about eight or nine months ago. He came in with a very small resolving pneumonia, but with a considerably elevated temperature, and on his forehead there was a blush, an erysipelatous blush. That erysipelatous blush spread with a very high margin, spread all over the brow, spread all over his face, spread all over his head. There was a minute abrasion just above the brow, from some accident to the skin a day or two before coming into the infirmary. Over the face large bullæ formed, and the fluid from these bullæ, taken aseptically by the department of bacteriology of the Royal Infirmary, showed abundant pneumococci, and none of the ordinary organisms that give rise either to erysipelas or to pus. It was a typical case of erysipelas, the cause of which was the coccus of pneumonia. Very different are these cases from the ordinary pneumonias we see. In fact, pneumonia presents itself under many forms and under many conditions in hospital practice. Now, I have not had time, and my house physician, Dr. M'Intyre, has not had time, to do more than look up the cases of the past two years. But thanks to him and to the assistance of the nurses, some of the leading facts in the cases of the two years have been gathered together. I find that in that time I have had under treatment in the Royal Infirmary 67 cases of pneumonia. Of these, 17 died, being a death-rate of 25·3 per cent. I may explain that every case that came in is included. An old woman of 60 came in, who died a few hours after admission. That is included. She was not more than twelve or fourteen hours in the hospital. A boy is included there who came in with a pneumonia in July, and who remained to die of phthisis in October in the ward. He came as a clear and distinct case of pneumonia, with no tubercular bacilli, but after a time in the ward, when his pneumonia was quite over, phthisis developed. This death-rate, 25·3 per cent, oddly enough, is practically the same as the last published returns on the subject of pneumonia, namely, those of Dr. Pye Smith, in his article in Allbutt's *System of Medicine.* Dr. Pye Smith publishes the results of 329 cases that the Registrars of Guy's Hospital collected from the years 1891 to 1894 inclusive, 32 hospital cases treated by Dr. Pye Smith himself and 73 consultation cases seen by Dr. Smith, in all 434 cases, with a mortality of 111, a mortality of 25·5 per cent, which coincides very singularly with the mortality of my 67 cases in the Royal Infirmary. That mortality, as Dr. Pye Smith says, is no doubt high, but cases that come to the hospital are not at all on a par with the run of cases in private practice. They have often been neglected before they come, they are often persons who have led very hard lives and have been alcoholics, and an alcoholic, above all, is the kind of subject that one does not like to deal with in pneumonia. When I look further into the figures I get some singular results. First of all, of the 67 cases, 12 were women. Of the 12, two died, and that includes the case of the old woman of 60, who was admitted practically moribund. Still I include the case. Well, 2 cases in 12, gives a mortality of 16·6 per cent. In the 55 male cases there were 15 deaths, giving a mortality of 27·2 per cent, or very nearly double the mortality amongst females. That, of course, is not at all to be wondered at, considering the sort of lives led by the men of the hospital class, as compared with the lives led by the women. But we have to go deeper than that. Twenty cases of the 67 were cases where the left lower lobe alone was involved. Three deaths out of 20 occurred, where the disease was confined to the left lower lobe, or a death-rate of 15 per cent. In 20 cases—the same number of cases—the right lower lobe was involved, with 6 deaths, a mortality of 30 per cent. In 4 cases the left upper lobe was involved, and of these none died. In 3 cases the right upper lobe was involved, with 2 deaths, a mortality of 66·6 per cent. In 6 cases the left upper lobe and the left lower lobe were both involved, with no deaths. Twelve cases there were of the right upper lobe and right lower lobe, with 5 deaths, a mortality of 41·6 per cent. These statistics bear heavily against pneumonia of the right lung as compared with pneumonia of the left lung. In 2 cases, both lungs were involved—one case I will mention by and bye—a very singular case. One died—I will speak of that too—a mortality of 50 per cent with both lungs involved.

Now, these points are of very considerable interest. In statistics elsewhere I find that the right lung generally gives very much worse results than the left lung. As to those who died, as to the seventeen deaths, age tells very greatly. Six of my patients who died were 60 years or over, one was 59, two were 40 or over, other five were 30 or over, one was 18, and one was 14. The one who was 14 was the case that died of phthisis three months after—not of pneumonia, but of phthisis. Still, it is only right to put it down. The lad of 18 who died had pneumonia of the whole right lung. These points I bring out to show you how very different a thing pneumonia is under different circumstances, and to say that such and such a treatment of pneumonia has been successful in any given case, you must know very much all the facts of the case.

Now, as to the natural history of the case, there are certain points of great consequence. In the first place, we are fortunate in this, that the invasion is usually very sudden. It is about as sudden as in typhus, and that strongly points to the circumstance of the disease being due to infection—an infectious disease. The invasion is sometimes very violent, with repeated sickness, and very severe headache. We can generally get the history. In almost all the cases we can tell when the condition began—it is, as in the old days, with typhus fever.

Then, as to the progress of the case, there are points that we take for granted if it is an ordinary case. We look for the temperature to come down about the sixth or seventh day. We look for a rapid fall. When I used to see typhus, the crisis was most remarkable. One does not see typhus cases nowadays. They are all taken to Belvidere. The crisis of pneumonia is often very much the same.

There is a particular point in connection with pneumonia that has always seemed to me to be of great importance with regard to the treatment, and that is—what comes of the consolidation? Now, I have had a pneumonia where the lung was so solid that on percussion of the lower lobe the sound was tracheal, the impulse of the percussion blow was carried to the trachea, and the tracheal sound was conducted back again; and yet, in this case, from beginning to end, there never was a single bit of sputum, not a vestige of expectoration. That was an extreme case, but in every ordinary case one of the characteristics of the disease is the scantiness of the sputum. That is extremely important as regards certain points of treatment. It is one of the most wonderful things—I am almost amazed at it—to see in an ordinary case the rapidity with which the consolidated lung clears up, and so little is expectorated. I draw attention to that, for it is an important matter in connection with the treatment.

Coming rapidly to the treatment, the management of these cases, these diverse cases, we cannot expect to have the same results at all times. Not at all. It is one of the striking circumstances, in watching pneumonia in the Royal Infirmary, to me that we will have a case that will do well whatever you do. It would do well in spite of you. If you bled and blistered, it would still do well. The doctor could not kill it if he tried. You will have another case of the same kind, and a run of such cases, and then you will have a case that will go all wrong. You will get another that will go wrong, and another, till you begin almost to break your heart about your pneumonias, which, of course, all support the view that we are dealing with an infectious disease of great essential variation.

Well, how do I manage my cases? I can assure you, very simply. They were fed on milk. Beef teas and animal broths are very nice, but the only individual that has got a real recipe for making beef tea is the cow. Milk is the best beef tea or animal broth that ever was made in this world. A tumbler of milk has more nourishment in it than a tumbler of any other preparation artificially made.

I remember once, long ago, hearing Sir William Gairdner, before he was Sir William Gairdner, talking about milk, and about certain people's inability to take milk, and he said he would give us—he did not call it a tip—but it amounted to that. If you give milk in such a case, give nothing else. In fact, I find in such cases milk is a royal drink. It will tolerate no rivals, and I don't trouble it with rivals in pneumonia. I have found no case at all where, if *anything* can be taken, milk cannot be taken. Milk, then, unquestionably. Then alcohol. I do not give alcohol as a stimulant at all, but as a food. The amount of alcohol that can be taken by a person in high fever, without in any way causing mental disturbance, is marvellous.

I have always thought it a pity that the late Dr. Anstie's work has so much fallen out of the general knowledge. Dr. Anstie, away back about '72 I think it was, published certain lectures in the *Lancet*. To me these lectures were, and are, classical. If ever a man did take up this subject in a scientific way it was Dr. Anstie then. They hold good with me up to the present day. The amount of alcohol that can be taken by a pneumonia patient without his being made drunk, and without his brain becoming affected at all, is very great, much more than he will be able to take when he gets out of bed. Dr. Anstie was a disciple of Dr. Todd, and Dr. Todd's work had come to be pooh-poohed somewhat. Alcohol was held to run away in the secretions. Anstie proved that it did not in pneumonia and typhus fever run away by the secretions. He proved that while if he or anyone in health took the same amount of alcohol in the same time, that the urine would contain a large amount of the alcohol taken, but that in fever it did not so contain it. Now, how is that? Milk will be *digested* if anything is digested. But is all the milk that is given digested? Look at a pneumonia patient's tongue and mouth in pneumonia or typhus. Just think of the condition of affairs there. Not only that, but in pneumonia the extraordinary way in which, in some cases, the bowel is coated with a fibrinous effusion is marvellous. That has been observed much more frequently of late years in connection with pneumonia than before. Dr. Workman had a case of mine in which it peeled off like a skin, and that condition of the fibrinous covering of the intestine is by no means at all so uncommon. The bowel is far oftener affected in that way than is supposed. Under these circumstances, what kind of digestion can be taking place? Of course, milk to be assimilated, must be *digested* to a large extent—the fatty part of it particularly—and one sugar must change into another. Alcohol needs no digestion. Alcohol goes through without digestion. It is a physical process. If the blood carries liberally to the tissues, as it does in any one here, the nutritive materials which the tissues want, the tissues take them, and if alcohol is brought to them, each takes a small quantity and passes on the remainder. The alcohol circulates largely as alcohol, and rapidly accumulates, and affects the brain. But in the typhus patient, in the pneumonia patient, that is not so. The blood is not bringing to the tissue all the nourishment that it wants. When it brings alcohol the starved tissue takes it, grasps it, and converts it ultimately into carbonic acid and water; takes it and uses it as food. That is how it is in these cases that alcohol can be used so much. It is not in them a stimulant; it is a food, and its action on the pulse is often remarkable—a diminution of hyperdicrotism, a lessening of dicrotism, a strengthening of the heart's action, a strengthening of the whole body. I don't give alcohol as a stimulant, but as a food, and often very liberally.

Now, there is another agent of treatment—which, I am sorry to see, Dr. Middleton passes over expressing his disappointment with it—that is, oxygen. As to the value of oxygen in pneumonia—as to its extreme value—I have not the slightest doubt. But observe, if you are going to treat a patient with oxygen, you must treat with oxygen freely. It is not the slightest use beginning with oxygen unless you are going to use it liberally. Dr. Middleton himself says that it gives relief for the time. Quite so. In a serious case it must be given abundantly and frequently.

Now, I said I would refer again to a case in which both lungs were affected. It happened in the spring of this year that a case came in with pneumonia of the right lower lobe. The whole of the right lower lobe was involved. He came in about the fifth day of the disease; he was very ill. His temperature was high. Well, my students looked at the case. Then, on the following day, I found that the right upper lobe was becoming consolidated, and, on the day after that, the right upper lobe was totally dull, and the right lower lobe remained totally dull. Well, that was bad enough. He was a boy of 18. But still more. The following day the left lower lobe became involved, and the left lower lobe consolidated entirely. We had the right lower lobe, the right upper lobe, the left lower lobe entirely solid; he had only his left upper lobe to live on. Well, I had not very much hope of the case, and I told the students it would almost certainly have one ending; but, I said, we will see what we can do. Now, you will understand the way we did the thing. That lad used 1,000 cubic feet of oxygen in ten days. My staff nurse devoted herself to the case; she was in the place nearly all the time. The patient had 600 feet of oxygen in five days, and 1,000 feet in ten days. The effect was quite decided. When it was withdrawn for any length of time, the patient's strength fell. He got never less than 12 oz. of brandy in the twenty-four hours. The result was he pulled through.

Then, again, as regards sleep. I have not the fear that Dr. Middleton has of producing sleep. It is my duty to produce sleep. Sleep the patient must have, and I am not afraid of producing sleep. In spite of all the new hypnotics and sedatives, I am gravitating back more and more to opium or morphia in such cases. Now, I particularly spoke of the manner in which the exuded material in the lung was absorbed —that it did not come up in any great quantity. That is of the very first consequence in this question of the treatment of these cases. It is a very different thing to giving opium in bronchitis; but in pneumonia, where the bulk of the material does not come up at all, and where it is not going to choke any of the tubes, where it is not going to be in the way, I have not the slightest fear of opium. It is different entirely in bronchitis. Of course, if you have a pneumonia unfortunately complicated by a secretion of fluid in the tubes, then you are in a difficulty. As regards special drugs, I do not know any drugs that are special to pneumonia, and therefore I shall not trouble you with any remarks on expectorants. In any ordinary case of pneumonia, there is nothing to *expectorate*, and the less you bring anything up the better—in pneumonia—so long as the rest of the lung is clear. Let it be absorbed as it will be absorbed—by the lymphatics. As regards the antitoxin that has been in use less or more for ten years past, proposed by Kleberer and made by Pain—well, I have not myself any experience of it. I believe it has been used on the Continent by many, and has been used lately, I see, in America, and considerable credit has been claimed for it; but I have no experience of it at all, and I would need to know a great deal more about it before I would be inclined to speak on it. Well, gentlemen, these are my points. I have endeavoured to fulfil what I undertook to do.

In answer to a question put by the chairman, Dr. M'Vail said—There are very few of my cases that, even on the first two or three days, doing well, were not put on 3 oz. of brandy in the twenty-four hours, and that is increased according to the condition of the pulse. With a hyperdicrotic pulse, it is necessary in pneumonia to push the alcohol to 4, 5, or 6 oz. or more. That is my opinion, of course. The hyperdicrotic pulse is a matter to me of the very highest moment. I find that, even before the temperature falls, I can tell often when the crisis is coming. I have large numbers of charts in cases of pneumonia in my wards. Generally, pulse tracings are taken daily, and generally—not always, but generally—you can tell the crisis is going to come perhaps half a day before the temperature falls from the condition of the pulse, and it is wonderful how the hyperdicrotism merges into dicrotism, and how the dicrotic wave begins to mount the line of pulse descent and get a third or half way up. All that may take place in the course of forty-eight hours; but with a hyperdicrotic pulse, certainly I give alcohol in that manner. Of course, larger doses are given in certain circumstances.

Dr. M'Call Anderson said—Mr. Chairman and gentlemen, in complying with the request that I should take part in this discussion, I am met by the initial difficulty, which also occurred to Dr. M'Vail, that pneumonia is not a distinct pathological entity, but a group of diseases. We have acute pneumonia and chronic pneumonia, croupous pneumonia and bronchial pneumonia, syphilitic pneumonia and tubercular pneumonia, and then, besides that, there are the pneumonias which are dependent upon other forms of micro-organisms. Besides the pneumococcus, you have, for example, streptococcus erysipelatis, and numerous cases have been recorded in which a patient suffering from erysipelas has spread disease to other members of the family who have not taken erysipelas externally, but pneumonia, which in that case is, to all intents and purposes, internal erysipelas.

I think, therefore, that the best plan for me to adopt is to limit myself to the treatment which I believe to be appropriate in cases of croupous or lobar pneumonia, although much of the treatment applicable to it is also applicable to the other varieties. For my own part, I have no belief whatever in the antiphlogistic treatment (bleeding, blistering, purging, &c.), excepting for certain special reasons; and, if you were to ask me what I consider the very best treatment for pneumonia, I would reply that it is feeding and nursing, and I have no hesitation in saying that if you get a case of pneumonia in the early stage, and put the patient under the care of two thoroughly experienced and trained nurses, one for the day and the other for the night time, very often no medicine of any kind is required.

It appears to me that, in the treatment of pneumonia, there is a great tendency to interfere unduly, and that arises, of course, partly from the fact that, in a serious case, the friends expect you to treat it energetically. And there is one point—it is a negative kind of treatment—which I am inclined very much to insist upon, and it is this—the great importance of not fatiguing and exhausting and distressing the patient by making careful daily, or twice a day, physical examinations of the chest. It is really altogether unnecessary to do so, because you can generally tell quite certainly that a patient is suffering from an acute attack of croupous pneumonia without any examination of the chest at all. There is the rigor at the outset, the decubitus, the flushed cheeks, the herpetic eruption about the lips, the high fever, the tenacious, rusty expectoration, the great perversion in the pulse-respiration ratio—a very important point—and, on examination of the urine, you will generally find that it is very deficient in chlorides, and often, if there is high fever, contains a little albumen. So, when these symptoms, or most of them, are present, you can be absolutely certain of your diagnosis. I do not say that you are not to make any examination, but no unnecessary examination of the chest; you must not treat the patient as if he were labouring under a chronic disease. Then, as regards the minor forms of treatment, some of them do no good, while they are distressing to the patient. That reminds me of an incident, which my father once told me, of a patient and friend, whom he visited one day, and who said to him, "Weel, doctor, how are you?" "I am not at all well; I have a very bad cold, and I put a mustard poultice on my chest, and it is very sore." "Weel, I'm very glad to hear it, for it will teach you doctors not to order mustard poultices right and left, as if they were nothing."

But, if we are to interfere medicinally, it must be for the purpose of dealing with some special symptom or complication. Now, for example, there are the two symptoms of severe pain and sleeplessness. If these are not attended to, it might go hard with the patient, and under such circumstances I should have no hesitation in making use of morphia subcutaneously. The only thing that would make me hesitate in the use of morphia would be if the patient had one lung blocked up with pneumonia, while the other was the seat of collateral hyperæmia and œdema, and the bronchial tubes were choked up with mucus.

There is one point in reference to delirium, in these and other diseases, which must never be overlooked, namely, that in a large proportion of cases, the delirium is simply one of the phenomena of the fever. Put your thermometer into the patient's mouth, and in many cases you will find that it registers a very high temperature, and if, under these circumstances, you resort to the use of antipyretic methods of treatment, when the temperature is brought down, the patient often falls into a sound sleep, and on waking the delirium has disappeared. That is a point that should be borne in mind—that delirium is often due to the high fever. Then, as regards the fever itself. It is generally high, but if the case is running its normal course, it is a disease of short duration, and therefore—in the case of a person who was previously in good health—it is not such a serious matter, and need not be unduly interfered with. Under these circumstances, you would only resort to the milder methods of treatment, such as sponging the patient with vinegar and ice-water, giving him ice to suck, and, if he does not object to it, all his food thoroughly iced. But if there is hyperpyrexia, or if the disease is prolonged, although the fever may not be excessively high—for a prolonged febrile movement is just as dangerous as high temperature for a short time—something more must be done. For instance, you might apply ice-bags to the head, to the affected side of the chest, and in the axillæ; and if you do not succeed in that way in lowering the temperature, you must resort to the use of antipyretics, of which the safest is quinine in single doses of 10 grains, or more if necessary. And in the last resort there is nothing for it but the use of the cold bath. Undoubtedly, a great many patients labouring under pneumonia are actually killed, burnt up, by the fever.

As regards the use of stimulants, I do not put such great faith in it as Dr. M'Vail seems to do. I think that most cases of pneumonia—because it is an exhausting disease—are the better of a little stimulant, particularly in the advancing stages; and, as regards their use and the amount to be given we must be guided by the same principles as would guide us in the use of stimulants in connection with one of the specific fevers. In cases of heart failure, of course, we would have to stimulate the patient freely, and the two medicines which appear to me to be most useful under these circumstances are subcutaneous injections from time to time of 5 to 7 minims of liquor strychniæ, or perhaps one-thirtieth of a grain of digitalin, or you might combine the two. If there is marked dyspnœa and cyanosis, I should certainly not hesitate to resort to the administration of oxygen mixed with a considerable portion of atmospheric air. I do not, however, agree with Dr. M'Vail in considering it in the light almost of a panacea. Nor do I think that the results of the oxygen treatment of pneumonia and similar diseases is, on the whole, very satisfactory.

And lastly, as regards the anti-pneumonic serum, I have not any personal experience of it, but as far as my reading goes, I do not think, up to the present time, that it has yielded favourable results; and all I can say, in conclusion, is, that if I find a a patient who resists the methods of treatment which I have endeavoured shortly to lay before you, I should certainly be very hopeless as to the result.

Dr. J. Lindsay Steven said—Mr. Chairman and gentlemen, I am very sorry that, like Dr. M'Vail, I have had so little time to devote to the statistical consideration of this subject before taking part in the discussion to-night. I have, however, looked a little into the records of my cases of pneumonia during the past six years, and I can give you a few of the results, not all. I am almost afraid to mention in this meeting the very high mortality which I found in my cases of pneumonia, taken as a whole. John Bunyan refers to consumption as the "captain of the men of death," and certainly, if we are to judge from the statistics of pneumonia I now submit, we may equally call it the "captain of the men of death." "Hospital statistics," according to Osler, "show that the mortality ranges from 20 to 40 per cent." Now, I find that the total number of cases of pneumonia treated in my wards at the Royal Infirmary, from 31st October, 1895, to 31st October, 1901, was 159. Of these, 128 were males and 31 were females. If we exclude from these the number of cases of broncho- or lobular pneumonia, and so limit our attention to lobar pneumonia, the number is 146.

Before giving the statistics, however, perhaps we can save time if I refer at this point to a matter that Dr. Middleton, Dr. M'Vail, and Professor M'Call Anderson have also referred to, and that is in the classification of pneumonia. The term "pneumonia" ought, in my opinion, to be confined to lobar pneumonia, and to that alone. I would exclude all septic pneumonias and all secondary pneumonias as being essentially different in type from the specific febrile disease which Dr. Middleton and Dr. M'Vail have so well described. Possibly there might be a difficulty in excluding the broncho-pneumonias of children from this specific conception of lobar pneumonia; but all the varieties of pneumonia due to the streptococcus pyogenes, to erysipelas germs, or to secondary extension, I would look upon as totally different types of disease, the treatment of which we are not considering to-night. Indeed, I think that, as has been suggested by Dr. Andrew Smith, of New York,[1] the term "pneumonitis" should be used in the designation of such types, and that in our discussion on treatment we should employ the term "pneumonia" in the limited and specific sense which I have just indicated.

But, including the broncho-pneumonias, and taking my pneumonias at 159, the number of deaths in these 159 cases was 57, giving a death-rate of 35·8 per cent. Dr. M'Vail mentioned 25·3 per cent. Well, there is 35·8 per cent. In the 146 cases of lobar pneumonia pure and simple, excluding broncho-pneumonia, the number of deaths was 54, giving a death-rate of not quite 37 per cent. If, now, we consider the duration of the residence of the patient in these 159 cases, and exclude (which Dr. M'Vail did not do, when he gave you his total death-rate, as I have just now given you mine) all the cases which were only one day or less than one day in the ward (15 cases in all, which might, on that account, be regarded as moribund on admission), we have a death-rate of 25·6 per cent. If we further exclude cases that were only in the ward for two days or under (11 cases in all, and subtract these as well), we have a death-rate in the cases that could be regarded as having been influenced by treatment in the hospital of 19·5 per cent. But taking the death-rate as a whole, we have the appalling mortality of 35·8 per cent. Now, that is a percentage which certainly depresses one very considerably when we come to think of the treatment of pneumonia. It is a death-rate which, I think, is clearly in favour of the view that has been so ably argued, both by Dr. Middleton and Dr. M'Vail, that pneumonia is essentially a disease which is subject to epidemic influence. In going over my list of cases, I find that the deaths are not scattered in ones or twos throughout the whole list, but that they come in regular runs, and I simply select one series of cases of pneumonia, admitted in the year 1897, from 17th February until 1st June, as a striking illustration of this fact. There were 7 cases admitted during that period, and they all died but 1. Three of them were admitted almost on the same day, in the month of May, and those 3 died. Now, that kind of thing is constantly happening. If you watch your cases, you will find that you will get perfect runs of deaths, and I hold that this is a strong argument in favour of the view that has been put forward, that we are dealing here with a specific fever of varying virulence, and when we get these virulent cases, it almost seems as if it did not matter what your treatment is, the tendency in these cases appears to be not towards cure, but towards death. In such cases, there is very little, I think, that we can do to avert the fatal issue.

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[1] *The Scalpel*, January, 1900, p. 2, quoted in *Consumption*, by J. Edward Squire, London, 1900.

But I believe that we have a specific fever in pneumonia, not only on these clinical grounds, but also upon anatomical grounds, and recently I subjected my *post-mortem* experiences of pneumonia to a critical investigation, dealing, in all, with something like one hundred and twenty *post-mortems* which I had conducted and recorded, and on anatomical grounds alone, I believe that I have obtained sufficient evidence that we are dealing with a specific infectious fever, although I am not sure that it is actually infectious from person to person, in the same way that the other specific fevers are.[1]

Dr. Middleton raised another point as to the cause of death in pneumonia, and that was, that he did not think that the failure of the heart—I think that was his argument—to force the blood through the lungs had much to do with the fatal issue. Well, considering it only for the moment, and during the time that Dr. Middleton was speaking, and trying to glance back upon my experience in the *post-mortem* room, I would be inclined to say that failure of the heart sometimes has a good deal to do with the fatal issue, and that the overloading of the right auricle was certainly an exceedingly common experience with me when I had to examine a good many of these cases in the *post-mortem* room.

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[1] *Glasgow Hospital Reports*, vol. iii., 1901.

Now, as regards general treatment, I have got to say that my line of practice is very much that which has been sketched out to you by Dr. Middleton. I do not know that I need to enlarge very much upon it. I certainly believe that the first element in the treatment of pneumonia is careful nursing and dieting, and I prefer, as Dr. M'Vail prefers, to make use of milk as a food. I do not use alcohol in pneumonia as a food, and here I am quite at issue with Dr. M'Vail. I do not know that I can adduce any experiment upon the matter at all, but when I do use alcohol in the treatment of pneumonia, I use alcohol as a stimulant, and not as a food, and I believe it is good as a stimulant in the treatment of this disease. Dr. M'Vail regards the diminution of hyperdicrotism in the pulse as one of the first evidences of the beneficial action of alcohol upon pneumonia. Well, I look upon that as the action of a stimulant upon the hyperdicrotism, rather than as that of a food upon the hyperdicrotism. That, however, may simply be a different point of view.

As regards the amount of alcohol that I find necessary, it is difficult to speak for all cases, but I may say that I seldom see cases that I consider to be benefited by a larger amount of alcohol than 4 oz., although I have sometimes gone the length of 6 oz., distributed in equal doses over the twenty-four hours. If you give 12 oz., I do not think you are likely to get very much good from this stimulant. I use it in these cases purely as a stimulant, and in the form of brandy or whisky.

I have a great belief in the beneficial effect of strychnine in maintaining the cardiac force in pneumonia. Like Dr. Middleton, I think that the strychnine should be given hypodermically. At first, in the early days of my work in the Royal Infirmary, I used to give liquor strychninæ by the mouth, giving 2 or 3 minims, along with 2 or 3 minims of tincture of digitalis, every four hours. One case that was doing very badly—and that opened my eyes to the danger of strychnine given in this way by the mouth—is recalled to me by what Dr. Middleton has said about the value of hypodermic injection. This case had been getting, during two or three days, every four hours, 3 minims of the liquor strychnine as a cardiac stimulant. The patient was doing very badly. I was seeing him at night as well as in the morning, and he was doing so badly one evening when I saw him that I thought I would administer in addition a hypodermic of one-sixtieth of a grain of strychnine. He had been getting it by the mouth up till that point. We gave him one-sixtieth of a grain hypodermically, and whether that was the last straw or not, I cannot tell you; but half an hour afterwards I was called to the case, and found him in a violent tetanic convulsion. Evidently the small addition of hypodermic injection, added to the cumulative effect of the strychnine that had been given by the mouth, had caused tetanic convulsion. Since then, I have never administered strychnine by the mouth, but always hypodermically, because, by so doing, it is not stored up in the system, and you are not so likely to get physiological effects. I think it a point worth remembering, that strychnine is better administered hypodermically.

There is only one point on which I would again like to join issue with Dr. M'Vail. Dr. M'Vail, you will observe, spoke with great decision, and with great certainty on the point, and consequently we are bound to give his statement the consideration which a very strong statement always deserves. I think I am not quite so ready as Dr. M'Vail to give up the other forms of stimulant, and particularly stimulating expectorants. I know quite well all the force of the argument, which he so ably put, as to the exudation being absorbed afterwards by the lymphatics, but some of the worst cases of pneumonia that I have had only began to get well when they began to spit, and I have seen carbonate of ammonia pull a patient round, when I had almost lost faith in his recovery altogether.

I do not think that I see any cases in the infirmary that would be benefited by bleeding.

Professor Stockman said—When Dr. Dun asked me to take part in this discussion to-night, he told me it was to be on lobar pneumonia only, at least I understood him to say so, and that he only wanted me to state shortly what the results of my own practice and observation in the treatment of it had been. I have therefore prepared no paper, or even any notes, but have trusted entirely to what is in my mind on the subject. Before going on to consider the treatment, I would just like to say that I agree with the previous speakers in regarding pneumonia as a specific fever of moderate duration, and that the lung condition is a comparatively subsidiary point in the disease.

Also, with regard to the causation, I may say that I think it is due to the pneumococcus of Fraenkel, and also to the pneumobacillus of Friedländer. For many years past, I have examined the spit of all the cases I have come across, all the cases I have myself had and others, and I have found invariably large numbers of these organisms, sometimes one and sometimes the other, and sometimes both together. I have tried very often to distinguish if the presence of the one or the other made any difference in the symptoms or severity of the case, but have failed to notice any material difference.

It seems to me that, no matter which organism is present, the symptoms are pretty much the same, and, therefore, that the toxine they secrete must be the same. Like all fevers of the kind, there is no doubt that pneumonia tends to cure itself, that sufficient antitoxine is sometimes produced in a few days—even three or four days—and you get the whole thing defervescing early without any treatment. In other cases, practically without treatment, on the seventh or ninth day it defervesces; again without the help of any special treatment. Then, with regard to the cause of death, I would like to say that, in a few cases, death undoubtedly takes place from the lung condition. I have had quite lately a case where there was extensive tuberculosis in one lung, which was excavated and very fibrous, while there was a very large area of croupous pneumonia in the other lung. It was quite impossible—to judge from the *post-mortem* appearances—that the patient could have had sufficient breathing space. He actually died of suffocation. Cases of that kind are rare compared with the deaths which take place, as the bulk of them do, from poisoning of the heart. The poisoning of the heart resembles, I think, that which occurs from other cardiac poisons, alkaloidal or otherwise; it results from depression of the nervous and muscular structures of the heart, and it leaves no particular trace or lesion behind. Then, as to the other point which has been referred to frequently to-night—the mortality. I once went over the mortality for five years of two large hospitals, one in England and one in Scotland, and found that it amounted to 27 per cent; but I do not know that statistics furnish a very good criterion of the prognosis of any case that you happen to have in your charge. You have to say to yourself, or to the patient and his friends, whether he is to belong to the 20 or 25 per cent who die, or to the 80 per cent or so who recover, and that cannot be done by statistics. You have to regard partly the severity of the epidemic, partly the character of the poison at the particular time, but I think very much more largely the patient himself; and I think it is quite unfair, from a statistical point of view, to include in hospital statistics alcoholic cases who die of pneumonia. Their chance of recovery is so very much less than the chance of other people, that you do not get a fair field in carrying out your treatment. Then there are other conditions, of course, which contribute to make pneumonia fatal, notably, of late, influenza. But my intention to-night is to state shortly, apart from these points, what is my ordinary treatment of my cases.

Formerly, I used often to leave them alone—if it seemed to be a mild case—kept them in bed, of course, and dieted them, not exclusively on milk. If the patient likes milk, and is willing and able to take it, I have no objection to his taking milk alone; but many people do not care for milk, and do not digest it well. It contains far too much fat for easy digestion by some people, and this is often the case in treating a case of pneumonia or fever. Fat often disagrees, and consequently I very often suggest to patients, or even order, that they get a certain amount of beef or chicken tea (not that it is very nourishing, but still, it is always of some value), jellies, or custard, which are all easily taken. The objection that a patient has to eating—one, at least, who is so ill as a pneumonia patient usually is—is the labour of chewing, rather than distaste for the food. Corn flour may also be given along with the milk, and an occasional dose of grey powder or calomel greatly helps the appetite and digestion. Then, the necessity for fresh air is, I think, very clamant; the room ought to be kept warm, but the windows should be open, or some other means of ventilation adopted, so that you get plenty of fresh air. The only other point, as regards the general nursing, is not to disturb the patient more than one can help. Pneumonia cases, which die suddenly, are found to have an *ante-mortem* clot in the heart—very often, at least—and I believe that disturbing them by unnecessary moving is frequently the cause of the sudden death, by forcing the clot into the pulmonary artery. I have said that formerly I often did not treat patients who had a mild or what appeared to be a mild attack of pneumonia, but for some years past I have always looked forward to the possibility of the pneumonia becoming worse and the heart failing. To forestall that, and as a precautionary measure, I invariably put the patient on tincture of strophanthus. It is well known that, when the heart is beginning to fail, it is too late to begin with strophanthus or digitalis, and in pneumonia I prefer strophanthus to digitalis. After beginning to give either of them, it is thirty or forty or forty-eight hours before it gets a complete hold of the heart, as it were, but if you start from the beginning, giving a small dose of 5 minims three or four times a day, it does not disturb the heart at all, which can, if required, be then brought almost immediately more fully under the influence of one or other of these powerful cardiac stimulants. This plan undoubtedly has successfully tided many a patient over the heart failure of pneumonia.

Then, with regard to alcohol, I do not give it at all as a routine treatment. I wait until there are distinct signs of heart failure, when the pulse begins to show some softening, or some slight signs of failure, and then start it, because its rapidity of action is quite different from that of strophanthus. You can get the effect of alcohol practically in a few minutes. It acts almost at once, and you get its full action in a very short time, and there is no necessity for starting it, as it were, before it is required. I must say that I do not agree at all with Dr. M'Vail that alcohol is of such great value as a food. When he speaks of alcohol, I understand he means whisky or brandy, and he has referred to Dr. Anstie's experiments in support of his view, but Anstie did not work in the precise way in which these dietetic questions are worked out now. Besides, what struck me as a little odd—I have read Anstie's papers, but it is a long time ago, and I have not got them clearly in my recollection—is, that he gave as much as six to eight bottles of port wine in the day to some of his patients.

Dr. M'Vail—Oh, no; I think he referred to what Dr. Todd had done. He was much more moderate than Todd.

Dr. Stockman—I know that, in a general way, but he refers to one or two cases, particularly of men who were employed in the wine vaults at the London docks, and he says that he gave these large quantities—six or eight bottles, or something like that, I forget the exact quantity—and then we find Dr. M'Vail coming here and saying that he follows the same practice, and gives the patient 3 to 6 oz. of whisky in twenty-four hours.

Dr. M'Vail—I must have spoken very obscurely if I have led anyone to suppose I gave stimulant to the extent of six or eight bottles of port wine. It almost appears as if I had had at least half of that amount myself.

Dr. Stockman—I did not say so. I said Dr. M'Vail describes himself as following Anstie's practice.

Dr. M'Vail—I did not say I followed his practice, I only adduced his reasoning and his experiments, and my own clinical experience as supporting the general conclusions of his works.

Dr. Stockman—I am sorry if I have taken it up wrongly, but, practically speaking, it is very doubtful if alcohol is really a food. It is split up in the body into carbonic acid and water, and it seems to me, at least in the present state of our knowledge, an impossibility that any constituent of the alcohol could enter into the cells of the body as a component part, in fact, be a food in any way. It supplies a certain amount of heat, and in that sense it is a food, and it probably also lessens the tissue waste of the cells in some way that is not clearly understood, but that it enters into the cells and becomes a constituent part of them as other foods do, and is used up as they are, is scarcely credible. And then, of course, alcohol furnishes a very small amount of heat. It can only give a very small amount of energy, if any, and I do not think it can in any sense be looked upon as a valuable agent in keeping up the heat of the body or for producing work. Its value seems to me to lie in its stimulant effect upon the heart. It dilates the blood-vessels and enables the heart to do its work more easily, and, further, it quiets the nervous system. It has a very distinct hypnotic effect, and it keeps the patient quiet and less alert to the miseries attending an attack of a disease like pneumonia. It seems to me that these actions constitute its value. In the same way, ammonium carbonate, which Dr. Lindsay Steven praised as a "stimulant expectorant," seems to me of value rather as a cardiac stimulant than as an expectorant. It is a powerful stimulant to the circulation and respiration, and can be used in the same way as alcohol if there is any necessity for it, and the same is true of strychnine. I do not say that the value of strychnine is at all comparable with the value of alcohol or the value of digitalis as a cardiac stimulant, but it acts quickly and powerfully for a short time—half an hour or an hour, certainly not more than an hour, possibly not more than half an hour. The advantage of giving it subcutaneously, as compared with the value of giving it by the stomach, rests largely upon the fact that, when you give strychnine by the stomach, a great deal of the alkaloid is caught in the liver and remains there practically inert. But given subcutaneously, at least part of it gets to the nervous system and stimulates it, secondarily stimulating the heart.

I must say, too, that I agree very thoroughly with Dr. M'Vail in what he said regarding the use of expectorants. The exudation in pneumonia is absorbed, it is not coughed up, and the only value of expectorants, as far as I have ever been enabled to see, is in cases where there is a certain amount of bronchitis. In expectorant mixtures, we usually find squills, carbonate of ammonia, spirit of chloroform (which consists chiefly of alcohol: 95 per cent alcohol, 5 per cent chloroform), all of which are cardiac stimulants, and derive their value from stimulating the heart. I think that is their action rather than an expectorant one.

Sleeplessness is another symptom which one is often called upon to treat. Now, I do not think, judging at least from what I have seen in pneumonia, that the toxines of pneumonia are very powerful poisons to the nervous system, compared at least with some other toxines, and the ordinary sleeplessness and restlessness, I think, can be treated perfectly safely with morphine. The fear of it goes back to the old days when pneumonia was looked upon as a purely lung disease, and when the dangers of non-expectoration were confounded with the dangers of non-expectoration which exist in bronchitis. But in pneumonia it is a very different matter, and unless there is bronchitis, I cannot see the slightest danger of using morphine in moderation. I have used it often, in fact, constantly. I believe that the rest the patient gets from it is important, the hurried respiration is very exhausting, and this it slows, it lessens the pain, if there is any pleuritic pain, and it gives sleep and quiet. Then, there is a fear that it acts upon the heart and depresses it. I do not think that is so. I never could see that it had the slightest depressing effect upon the heart, at least in doses up to about one-sixth of a grain, and often one-eighth or even one-tenth is enough. You can give up to one-sixth or one-fourth without any particular danger. The cases which Dr. Middleton referred to of morphine greatly increasing the delirium and stupor, and causing the death of the patient, are, I think, cases where you have meningitis from a so-called complication, but which really are due to a spread of the infection to the meninges, and, of course, opium is inadvisable in all forms of meningitis. If there is meningitis in pneumonia, morphine probably hastens the fatal result. But in ordinary sleeplessness and ordinary delirium, I have never seen the slightest danger in giving it. I have given it freely for years. It is certainly by far the best hypnotic. The only other one which is of much value is chloral hydrate, twenty grains being often efficient, but if the patient is requiring sleep very badly, morphine is the only hypnotic that acts well.

I have never given oxygen except with a mouthpiece, and I have never seen it do much good. It is bound to do a little, theoretically at least, but the relief to the patient is certainly not striking in any case in which I have given it. Then, locally, for pain in the chest, I apply either an icebag or a poultice, sometimes one, sometimes the other. I very seldom blister, although I believe it is more efficient, perhaps, than either. But blistering disturbs the patient. On several occasions, while a patient was recovering, I have put on a blister and got serum, with the idea of using it as an anti-pneumotoxin, and have injected it into other patients. It is said to be efficient if you get a patient just at the beginning of the pneumonia, and that it cuts it short. I cannot speak with decision on the point, but only in one case has it ever seemed to modify the course of the disease, and that not very distinctly. One would require more experience before speaking decidedly, for, of course, the blood must contain some antitoxine, and if what you can get from a blister is enough it is theoretically quite a good way of treating pneumonia. I think what has, perhaps, been wrong is, that we have either not got enough of the serum, or we have not given enough to these cases.

Then, the only other point I have to mention is with regard to prognosis. It has been known for a long time that in pneumonia, the blood is in a condition of leucocytosis, and of late attention has been prominently drawn to this. We have made a considerable number of observations in different cases, and we find invariably—I may say there is only one case at least where there has been a fatal result—that when you get a large leucocytosis, the patient recovers. It seems to indicate a determined resistance to the toxine. In normal conditions, the number of white corpuscles is about 8,000 per cubic millimetre. In pneumonia, if the patient is going to do badly and not recover, they do not rise above 12,000 or 13,000 or so. But in every case where the patient makes a strong and vigorous resistance, they have risen considerably, and in one to as much as 54,000. That is the highest we have had, but frequently we have seen from 25,000 to 40,000 leucocytes instead of 8,000, and no matter how ill patients have been, if we have got a number of between 25,000 and 40,000 (except in this one case), they have always ultimately recovered.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1901-1902.

MEETING III.—9TH DECEMBER, 1901.

The President, MR. H. E. CLARK, *in the Chair.*

DEMONSTRATION OF WORKS ON PATHOLOGICAL ANATOMY.

BY DR. JAMES FINLAYSON.

Dr. Finlayson, in his preliminary remarks, said the subject was one which could well be brought before such a society as the Pathological and Clinical, while the actual demonstration of the books brought the communication within the scope of this Society. He proposed to deal chiefly with what might be termed the classics of pathological anatomy rather than with works of later date dealing with modern pathological histology. He thought that works on the latter subject, being published within comparatively recent years, did not possess such historic interest as those he had mentioned.

To those who might wish to study the history of pathological anatomy, he recommended the introduction to Lebert's *Traité d'Anatomic Pathologique.* The origin of the subject might be justifiably traced, in his opinion, to the Egyptians in connection with their processes of embalming, and, more definitely, it took its origin in the great Alexandrian School of Medicine. Thus, Erasistratus wrote a work on the anatomy of special affections.

At the time of Galen, dissections of the human body had, for many reasons, passed out of use. Anatomy—and, therefore, also pathological anatomy—did not have an important place assigned to it as a science until human dissections were again appealed to, in the time of Vesalius, and direct observations were made on human structures by those teaching anatomy and medicine.

Theophilus Bonetus, a Frenchman, was the first to connect the scattered facts of pathological anatomy into a single important work, published in 1679. This volume, not inaptly known as the "Sepulchretum of Bonetus," though professing to deal with this whole subject, is really a vast compilation of the anomalies and curiosities of medicine, and makes no attempt at a scientific treatment of pathology. It deals too largely with rarities or monstrosities to give to each subject its proper relation, and is evidently the result largely of compilation from other authorities. Moreover, the references given are often inaccurate and untrustworthy. In spite of these grave faults, however, it is a remarkable work.

Between the appearance of the work of Bonetus and the great work of Morgagni, a hundred years later, quite a number of works were issued dealing with different aspects of the subject. Amongst those, that of Ruyschius (1691), which is an admirable collection of medical and surgical cases, may serve as an example.

Morgagni *De Sedibus et Causis Morborum* is one of the really fundamental works on the subject. Dr. Finlayson exhibited the various editions of the work possessed by the Faculty of Physicians and Surgeons. In some of these the addition of the four capital letters P.P.P.P., after the name of Morgagni, had given rise to some speculation as to their meaning. In Dr. Finlayson's opinion, a satisfactory explanation of their significance might be found in the fact that Morgagni was at the same time Primarius Professor of Anatomy and President of the famous University of Padua (Professor Primus—or Primarius—Praesesque Pataviensis). To some extent the work of Morgagni is founded on the earlier one of Bonetus. The defects and inaccuracies of the latter work, however, are largely eliminated, and, in addition, much new matter is incorporated from the original work and observation of the author. As Morgagni's own dissections numbered more than six hundred, it will be at once apparent that he possessed a tolerably wide basis for anatomical study. Morgagni showed also that Bonetus had been apt to assume as signs of disease appearances which were really normal.

Dr. Finlayson remarked that there were probably two or three original members of the Society present that evening who recollected the first presidential address delivered before this Society in 1874, by Sir William T. Gairdner (published in the *British Medical Journal*, 24th October, 1874, and reprinted afterwards in the *Physician as Naturalist*). For a brief, but worthy, estimate of the work and influence of Morgagni, Dr. Finlayson recommended this address. The article "Morgagni," in the last edition of the *Encyclopædia Britannica*, might also be referred to. The work of Morgagni was based on over seventy letters, written to a young medical friend and former pupil of his own. This epistolary series was commenced when Morgagni was already over 60 years of age, and it continued till he was 80. He died at 90 years of age.

The published works of William Hunter could scarcely be said to fall within the scope of the present subject, and they were accordingly only briefly referred to by Dr. Finlayson; but of great importance was his museum of anatomical and pathological preparations. In this connection, Dr. Finlayson reminded the members that this collection is now made more accessible to workers in pathology by an appreciative reference to the new catalogue of the Hunterian preparations, by Dr. John H. Teacher, the Editorial Secretary of the Society, recently published for the University of Glasgow.

As to John Hunter, Dr. Finlayson referred to the appreciation of him by Buckle, in the *History of Civilization*, as the great philosophic pathologist of his time. Besides his printed works, of which the most important for the science of pathology was the treatise *On the Blood, Inflammation, and Gunshot Wounds*, the Faculty Library contains a MS. of his *Surgery Lectures*, much shorter than, but resembling, the lectures published in Palmer's edition of John Hunter's works from notes taken in shorthand. Dr. Finlayson also showed the catalogues of the Hunterian museum of the Royal College of Surgeons of England, the physiological prepared by Sir Richard Owen, and the pathological by Sir James Paget. The two volumes of essays, published long after Hunter's death, under the editorship of Owen, were also referred to as completing the great sum of John Hunter's contribution to pathology.

The works of the first British systematic writer on pathology —Matthew Baillie—were next shown, viz., the treatise *On Morbid Anatomy* and the volume of *Engravings of Morbid Anatomy*. The latter represents the first attempt to produce an atlas of morbid anatomy. Matthew Baillie owed much to the training and influence of his uncle, William Hunter, to whom he was an adopted son and heir. Further, many[1] of the illustrations in the atlas were taken from the preparations now in the Hunterian Museum of the University of Glasgow; they were drawn by William Clift, the devoted assistant of John Hunter, and afterwards, happily, the keeper of his museum in the Royal College of Surgeons of England.

After Baillie, pathological anatomy was represented by Sir Charles Bell's *Engravings of Morbid Parts, &c.*, 1813. To the same period may be referred, although published some twenty years later, an atlas of coloured plates by Dr. James

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[1] 114 out of the 207 figures in the Atlas.—Ed. Sec.

Hope—*Principles and Illustrations of Morbid Anatomy;* and also the *Pathological Anatomy* of Dr. Robert Carswell, a native of the West of Scotland. This work is spoken of by Dr. Payne, of London, as the best of its time, and, in many respects, it still commands our admiration.

After this the publication of atlases of pathology in this country may be said to have ceased, to be renewed again by the atlas of the Sydenham Society, and that of Kast and Rumpel (the text of which has been translated by Dr. Armand Ruffer), published quite recently.

At the same time, the subject was advanced by the great physicians and surgeons who illustrated special parts of the subject. Of these, the most notable works shown were as follows:—Sir Astley Cooper, on *Hernia* (1804), *Dislocations and Fractures* (1822), and *Structure and Diseases of the Testis* (1830); the works of Bright, circa 1830, and Addison; of John Richard Farre, circa 1814; Joseph Hodgson, on *Diseases of the Arteries*, 1815; and Annesley's work on tropical diseases, published at the expense of the East India Company in 1828. Beside the last of these was placed a work of a much later period—H. Vandyke Carter's *Fungus Disease in India*, of date 1874.

Abroad, at the beginning of the nineteenth century, there was equal activity in the science of pathology. Bichat was the first to herald the modern science of pathological histology. He illustrated the more minute changes present in morbid processes, devoting attention to the affections of the constituent parts of the organs, as well as of organs as a whole. In spite of the undeveloped condition of microscopy before his untimely death in 1802, at the age of 31, he had accomplished remarkable work of enduring value.

Laennec, also, may be regarded as a notable pathological anatomist, as well as a great clinician. He invariably sought to discover the relations existing between the conditions observed at the bedside and those revealed in the *post-mortem* room.

Special attention was also directed to the beautiful copies of the works of the great Italian, Scarpa, on hernia (1809), and on aneurism (1804); while the German school of the same period was represented by, among others, Meckel, Lobstein, and, somewhat later, Rokitansky, the great Viennese pathologist (1842-46).

In France, specially to be noted were the beautifully-executed atlas of Billard (1828), and the works of Rayer on the kidney (1841), and of Cruveilhier, whose activity extended over a period of about fifty years, from 1820 onwards.

Coming yet nearer our own times, Dr. Finlayson demonstrated a wealth of splendid works, of which only a few can be enumerated here, such as the plates of Frerichs and Duchenne, and the atlases of Lebert ("the perfection of coloured plates of morbid anatomy"), and Lancereaux and Lackerbauer.

Finally, Dr. Finlayson showed a development of the modern art of photography—a stereoscopic atlas; and some of the German cheap but useful atlases which are now being issued in English by Messrs. W. B. Saunders & Co.

[The books were arranged in groups on the table, and during various intervals time was allowed for the inspection of each group.]

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1901-1902.

MEETING V.—28TH NOVEMBER, 1901.

The President, DR. JOHN STEWART, *in the Chair.*

FURTHER OBSERVATIONS ON CONGENITAL WORD-BLINDNESS.

BY DR. JAMES HINSHELWOOD.

In introducing the subject of word-blindness, the speaker referred to the comparative frequency of the disease, he himself having seen quite a number of cases during the last few months. He thought that we were too apt to think of the eye itself when dealing with the power of vision in any given case. In order to comprehend the full extent of the visual act, we must think also of the relationship of the work of the brain. As an illustration of this close relationship of eye and brain, he mentioned the result of the operation for congenital cataract. After removal of the cataract the patient, while able to perceive, was for a time unable to recognise—the visual memory not having been developed. In connection with each special sense there was a memory, which developed unconsciously and enabled us to remember past impressions. In some persons these memories were highly developed, and an instance of an acute visual memory was given, in which a painter, after only once having seen the person, could produce a good portrait. In some brain diseases, on the other hand, the patient, while able to see with his eyes, could not recognise his own relatives. With regard to the anatomical connection of the auditory speech and visual centres in the brain, Dr. Hinshelwood showed by means of diagrams that they received their blood supply from the same artery. A thrombosis may affect one branch of the artery, and should that branch supply the brain area connected with the visual memory for words, there would be produced a state of word-blindness, though the eye structures would be found on examination to be quite normal. From a prolonged study of the subject, he had come to the conclusion that there were memory centres in the brain for words, figures, and letters; that in man these centres were acquired; that they were present on one side of the brain only, and that they consisted of groups of specially developed cells. On what other theory, he remarked, could be explained those cases in which the memory for words alone was blotted out, or where the scholar conversant with many languages became word-deaf to his mother tongue? After some remarks on prognosis, he referred to treatment, and recommended re-education of the patient in the hope that a corresponding area on the other side of the brain might develop and take up the work. Speaking particularly of congenital word-blindness, Dr. Hinshelwood read the notes of two cases seen lately. Both children were very intelligent, could speak, spell, count, and repeat passages by heart aloud, but had great difficulty in learning to read. In the attempt to read, both children would repeat aloud the letters of the word, thus making use of the auditory memory centre, which was quite intact. In explaining the causation, he thought there was defective development in the cells of the brain area concerned with the visual memory for words and letters. In conclusion, Dr. Hinshelwood dwelt on the importance of having these slight brain defects of children attended to, and advocated special classes for backward children.

In the discussion which followed, the *President*, *Drs. Wauchope*, *Watson*, *Dunning*, *Coulson Howie*, and *D. Young* took part, and at the close *Dr. J. Fraser Orr* proposed a vote of thanks to Dr. Hinshelwood for his interesting address.

MEETING VI.—12TH DECEMBER, 1901.

The President, DR. JOHN STEWART, *in the Chair.*

I.—LANTERN DEMONSTRATION.

BY DR. R. STOCKMAN.

In the materia medica classroom, Professor Stockman showed a large number of lantern slides illustrative of clinical and therapeutic interest. The serious effect produced by lead-poisoning on the various tissues of the body were well depicted. The constant growth of the connective tissue, the degeneration of the muscular fibres, and the hypertrophy of the coats of the blood-vessels as a result of the action of the lead, were rapidly surveyed. In the same disease, a photograph of the large intestine showed numerous well-marked constrictions at different parts of its course; and pulse tracings were given to illustrate the usual increase of the blood pressure. By a series of slides, the different stages in the preparation of anti-diphtheritic serum were brought under notice. Charts were thrown on the screen by which, at a glance, the beneficial effects of the antitoxin on the local throat condition and on the pulse and respiration could be rapidly recognised. The injurious effects at times resulting from dressings containing weak solutions of carbolic acid were represented. In one case, gangrene of the finger necessitating amputation was induced by a 5 per cent solution. In the opinion of Dr. Stockman, this unfortunate result was produced by the acid causing thrombosis of the artery and the absence in the finger of any collateral circulation. Members were reminded of the peculiar susceptibility to drugs in some persons by the exhibition of slides depicting appearances caused by small doses of cocaine, atropine, and iodine. Other photographs of general interest concluded the lantern demonstration, and at the close members had an opportunity in an adjacent room of viewing diagrams of various diseases, and also some microscopic slides.

II.—LANTERN DEMONSTRATION OF THE PARASITES OF MALARIA.

BY DR. JOHN GLAISTER.

In the forensic medicine classroom Professor Glaister, at a later part of the evening, gave an address, accompanied by a lantern demonstration, on the life-history of the parasites of malaria.

The usual votes of thanks brought the meeting to a close.

MEETING VII.—19TH DECEMBER, 1901.

The President, DR. JOHN STEWART, *in the Chair*.

DISCUSSION REGARDING RECENT PROCEEDINGS OF THE GENERAL MEDICAL COUNCIL, AND THE STEPS THAT SHOULD BE TAKEN THEREANENT.

DR. STEWART, in introducing the business of the evening, remarked that the medical profession in this part of the country had been brought into more intimate contact with the General Medical Council during the last twelve months than at any period of former time. The idea we fondly cherished of the General Medical Council, that it was a body having the interests of medical practitioners at heart, always anxious to listen to grievances, has proved but a pleasant dream, from which we have had a rude awakening.

You are aware, continued Dr. Stewart, that the medical practitioners of Glasgow and the West of Scotland had occasion to approach the Medical Council, and sent to London a deputation in support of a memorial.

At the same time, and on the same subject, the Glasgow Southern Medical Society forwarded to the Council a petition signed by the office-bearers. It is now a matter of history that the memorial of the practitioners was not accepted, the deputation was not received, and the petition from our Society was not even acknowledged. We are, therefore, forced to the conclusion that the Medical Council, as presently constituted, is not in sympathy with the work of general practitioners. Further, our attention has been particularly drawn to the manner in which the Medical Council discharges its judicial functions. The only final power it possesses is in connection with a charge of infamous conduct in a professional respect, and, in this capacity, many have come to regard the Council with absolute distrust. We have seen it, in the exercise of its functions, frame an indictment, the terms of which betrayed either complete ignorance of the law or a deliberate ignoring of the law. We have known it issue an indictment which made a grave charge of illegal conduct against the accused—viz., that of employing another to break the law—and we have seen it sustain the charge on facts which, to the unbiassed mind, did not bear out the indictment, much less substantiate a charge of infamous conduct. We note that, though in support of the charge of infamous conduct, the Council furnishes particulars in an indictment to which it gives publicity, yet, in considering the charge, it ignores particulars, and makes a test by facts which have little or no relation to the terms of the indictment. We believe, therefore, that the General Medical Council is not an impartial judge, and that, in questions which ought to be decided by legal methods, it is influenced by sentiment and prejudice.

Need we wonder, then, that many accused parties, though conscious of their innocence, should feel that for their own safety it is better to appear before the tribunal with "bated breath and whispering humbleness" and express regret. It is our duty, however, to protest strongly against the action of the Council in so humiliating men of staunch integrity, and holding up the profession, in this part of the country, to public ridicule and scorn. It is universally held that the General Medical Council is not a legislative body—that it has no power to make or alter laws; but a moment's consideration will show that the unrestricted power it possesses—of which it takes the fullest advantage—of defining what is infamous conduct, makes it a very powerful legislative body indeed. It has only to say, "Do this, or the Council will adjudge you guilty of infamous conduct; don't do that, or by the power committed to the Council, under such and such sections of the Medical Acts, the Council will erase your name from the register." Surely, no body of men should possess such absolute power, certainly not any body whose judicial fair-mindedness is open to doubt. From these considerations, from the unsympathetic attitude of the Council to the medical profession, from the prejudiced administration of its judicial functions, from its arrogant assumption of legislative powers, from its apparent laxity in administration, and from other considerations, from sins of omission and from sins of commission, the medical profession has ceased to repose that confidence in the General Medical Council, which as the governing body of medical education and registration, it ought to command. Reform is needed, and we believe that, in the first place, reformation should be in the direction of (1) a great increase in the number of direct representatives, and (2) a complete withdrawal of the final powers of the Council, or at least a more restricted definition of same. The present time, he believed was opportune to petition Parliament. It would not be difficult, he thought, to show that the profession ought to be more liberally represented on the Council; and many believed that we should ask that the power of erasure from the Council should be relegated to the courts of law.

The Chairman then invited discussion on the subject, in which many members took part, and, at the close, the following resolution was moved and adopted, viz.:—"That the Council of the Glasgow Southern Medical Society be empowered to take steps to draw up a memorial for presentation to the members of Parliament, and to Parliament itself, seeking support for an increase in the direct representation to, and restriction of the final powers of, the General Medical Council; and that other medical societies be invited to co-operate."

It was agreed to defer further discussion of the subject until next meeting of the Society.

MEETING VIII.—26TH DECEMBER, 1901.

The President, DR. JOHN STEWART, *in the Chair.*

I.—A DISCUSSION ON THE QUESTION, "WHAT ARE SCHEDULED POISONS?"

According to an agreement arrived at by the Council of the Society, it was arranged that the meeting fixed for 26th December should be an open one for professional conversation; and, following on the discussion of the meeting previous, it was suggested that the question of the definition of scheduled poisons should be taken up. In view of recent proceedings of the General Medical Council, great interest was manifested in the subject.

Several speakers drew attention to the great uncertainty existing in many minds as to the drugs which should be regarded as poisonous within the meaning of the Pharmacy Acts. After a lengthy discussion, it was recognised that there was some ground for the condition of uncertainty regarding the poisons, and it was unanimously resolved to appoint a committee to inquire further into the matter, and particularly to define those drugs mentioned in the Pharmacy Acts as "poisonous vegetable alkaloids and their salts."

Drs. Stewart, Forrester, Russell, Robertson, Young, Fraser, Orr, and Wauchope were elected to form the committee, with power to add to their number, and were instructed to report the result of their investigations to a future meeting of the Society.

II.—A DISCUSSION ON THE RECENT EDICT OF THE GENERAL MEDICAL COUNCIL WITH REFERENCE TO OPEN SHOPS AND MEDICAL HALLS, AND UNQUALIFIED DRUG ASSISTANTS.

The subject of the recent edict of the General Medical Council, as published recently in the public press, next engaged the attention of the meeting.

In the course of the discussion, strong criticism was made of the terms of the edict, and the opinion was freely expressed that the Glasgow Southern Medical Society, as a body, should formally send in a protest against the edict to the General Medical Council.

A resolution empowering the Council of the Society to draw up a protest in the name of the Society, was then moved, and carried unanimously.

REVIEWS.

Memoirs and Letters of Sir James Paget. Edited by STEPHEN PAGET, one of his sons. With Portraits and other Illustrations. London: Longmans, Green & Co. 1901.

THIS is one of the most stimulating books we have seen for a long time, and it would be a good thing if a copy of it could be put in the hands of every medical student. Paget was gifted by nature with soundness of body and mind, and he used to the full his natural capacity for hard work. One other talent to which he was disposed to attribute some of his success was the ability to speak fluently without preparation. He recognised the danger of this possession, but he was saved from its usual consequences; partly, perhaps, through a wise self-restraint, but more through his intense devotion to work of a kind which seldom permitted him to indulge in after-dinner oratory. Including the time spent in connection with appointments, his working day, in the active period of his life, was sixteen hours. There was much pathos in the earlier part of Paget's career, though in the long run he had his reward in full. He had to struggle at first against poverty, and for a long time he had to assist the home circle, who had fallen on evil times. If he had died before he was forty-seven, his wife and children would have been left in extreme poverty. Nevertheless, the whole narrative is in the highest degree creditable to Paget and his family. In his religious earnestness, high moral tone, purity and kindness of heart, unconquerable devotion to duty, tenacity of purpose and diligence, Paget was one of the finest specimens of our race.

Manual of Practical Anatomy. By the late PROFESSOR ALFRED W. HUGHES; Edited and Completed by ARTHUR KEITH, M.D. In Three Parts. Part I: The Upper and Lower Extremities. London: J. & A. Churchill. 1901.

THIS *Manual* is a new work, which appears posthumously, and was designed by its author to be an aid to the student in the dissecting room. It is issued in three parts, of which the first, dealing with the extremities, is before us. The object in publishing in parts is to secure for the student a volume of a size easily handled while dissecting.

Professor Hughes died of typhoid fever, contracted while in charge of the Welsh Hospital in South Africa, and he had not completed the work in all its details. The editor, Dr. Keith, in filling up the blanks, has followed out the author's intention of dealing with each subject "according to its relative importance from a medical or surgical point of view."

It was intended that the illustrations should be a leading feature, and this is clearly evidenced by the large number (38) of coloured plates which appear in the present part of the work, while, in addition, there are 116 figures in the text. It is a pleasant change for the anatomical reader to look on new figures, and those which adorn this volume form a repast which, in both quality and quantity, may be styled without exaggeration as sumptuous. Of the 38 coloured plates, 24 have been prepared from dissections in the Hughes' collection at King's College; for these we have nothing but praise. On the other hand, the osteological plates "after Holden," while distinct, lack the finish of those in that well-known work on osteology. Of the 116 figures in the text, 31 have been prepared by the editor, while the remainder are all, more or less, old friends. While Dr. Keith's drawings can hardly be considered works of art, they show clearly the structures intended, and they will be accordingly appreciated by the dissector. Some of Mr. Balean's drawings, illustrating main arteries and their branches, are also very clear, and will prove helpful.

With regard to the text, the directions for raising the integument are very vague, and we confess to inability to follow those for the skin-incision in the pectoral region. Again, while in a dissecting mannal one does not look for the detailed descriptions found in the larger systematic treatises, yet some points, *e.g.*, the insertion of the pectoralis major, might have been more fully indicated. The relation of the median nerve to the tendon of the palmaris longus (Fig. 34) is not accurately drawn, and we cannot find the lumbricales muscles which, we are told, exist in Plate X. The description of the adductor obliquus pollicis is inaccurate, no mention being made of the slip which generally passes outwards to join the insertion of the "outer" flexor. The relation of the different extensor tendons to the "snuff box" is left vague. On p. 145 the reference to Plate XVII (for insertion of obturator internus) should be to XXIV, and on p. 151 reference should be to Fig. 100.

The text is readable, forming a fitting helpmeet to the illustrations, and we are sure that the *Manual* will meet with the hearty reception which it deserves. Our only regret is that so handsome a volume should be doomed to the thumb-marks, &c., which necessarily leave their impress on the companion of the dissector's daily labours.

Rough Notes on Remedies. By WM. MURRAY, M.D., F.R.C.P. Lond. Fourth Edition. London: H. K. Lewis. 1901.

WE are glad to note the rapid sale of this admirable little work, the last edition of which appeared not much more than two years ago. The present edition is a reproduction of the third, with the addition of new chapters on Rothbury as a health resort. There is also a new preface. We note that several misprints which formerly appeared have been rectified, but one has still escaped attention—"effect" instead of "affect," on page 132.

This is a work which ought to be mastered by every medical practitioner, and we heartily commend it to the attention of our readers.

Lessons on Massage. By MARGARET D. PALMER. London: Baillière, Tindall & Cox. 1901.

Manipulation (or Massage). By JOHN ANDREW PETERS. Newcastle-on-Tyne: Mr. Longhust. 1901.

THESE two works on massage are just about as different one from the other as any two books treating the same subject could possibly be; for while the former is devoted to a systematic description of the technique used in massage, the latter leaves that part of the subject strictly alone, and confines itself chiefly to an account of the numerous cures its author has wrought.

Of *Lessons on Massage* we have nothing but good to say. As its name implies, it is a course of lectures on massage, written much as they were given, at the London Hospital; and the book is really a text-book for the use of those studying this subject. The book is well planned and well written, and the description of the various "movements" in use is excellent. It contains an ample account of the anatomy of the bones, ligaments, and muscles; and the tables which have been drawn up, giving, as they do, at a glance, the origin, insertions, actions, and nerve-supply of almost all the muscles of the body, must prove invaluable to the masseur. It is excellently illustrated, both in regard to the anatomy of the muscles as well as in regard to the movements in use in rubbing these muscles.

As to the other book—*Manipulation (or Massage)*—we have but a poor opinion of it. We note that its author has been careful to inform us "that advertisement is not its object, but the wish to bring the results of twenty years' practical work and observation before those interested in this mode of treatment." He also adds "that by attempting originality, and ignoring the plagiarism characteristic of many writers, he is making his task the more onerous, and still more so when he questions their theories and mode of application." The author's views in regard to the etiology and pathology of "rheumatism," "arthritis," "paralysis," and other morbid conditions are doubtless (as he claims them) original, but we fear they have little other merit. Indeed, it is difficult to know what is meant by such terms as "arthritis," "rheumatism," and "paralysis," and, as used in this book, they convey no definite meaning to us. In places, too, the construction is of such a sort that it is impossible even to guess what the author is driving at. This is well illustrated by page 69, which is entirely occupied by one single sentence, the meaning of which, after several determined attempts to find it, still remains completely hid from us. We can find little of value in any part of the book, and certainly not enough to justify its publication.

Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S. Fifteenth Edition. Edited by T. PICKERING PICK, F.R.C.S., and by ROBERT HOWDEN, M.A., M.B., C.M. London: Longmans, Green & Co. 1901.

WE return with pleasure again and again to this beautiful work, which has undergone a careful revision for the present edition. Among the changes noted are new diagrams and fresh illustrations, and an amplification of the section on embryology, which is further elucidated by a large number of additional figures. We have no doubt that the editors will have their hope fully realised in finding that this edition maintains the high reputation won by its predecessors.

Quain's Dictionary of Medicine by Various Writers. Third Edition, largely Rewritten and Revised throughout, with Fourteen Coloured Plates and Numerous other Illustrations. Edited by H. MONTAGUE MURRAY, M.D., F.R.C.P., assisted by JOHN HAROLD, M.B., B.Ch., B.A.O., and W. CECIL BOSANQUET, M.A., M.D., M.R.C.P. London: Longmans, Green & Co. 1902.

THE late Sir Richard Quain produced the first edition of this work in 1882. In preparing the second edition, which was issued in two volumes in 1894, Sir Richard had the assistance of Drs. F. T. Roberts and J. Mitchell Bruce. The present edition appears in one volume under the editorial supervision of a new staff, and it might almost be enough to say that the traditions of the past are fully maintained. Though the work is styled a dictionary of general pathology, general therapeutics, hygiene, and diseases of women and children, and though it appears in one volume and has its articles arranged in alphabetical order, it is really an encyclopædia of medicine. The type, though not large, is very clear, and the matter is arranged in two columns per page. The long list of contributors includes many who stand in the front rank of the medical profession, and is not confined to British or even to European authors. The articles generally are remarkably comprehensive, and, so far as we have observed, accurate and up to date. They contain all that the ordinary practitioner needs to know about the subjects of his profession. The cross references are of great advantage. The whole work reflects immense credit on those who have produced it, and especially on the editors.

On the Cure of the Morphia Habit without Suffering (Physiological Demorphinisation), with a Note on the Physiological Method of Relieving the Craving for Drink. By OSCAR JENNINGS, M.D. Paris, M.R.C.S. Eng. Second Edition, Revised and Enlarged. London: Baillière, Tindall & Cox. 1901.

WE heartily welcome a new edition of the work which first appeared in 1890 under the simple title of *The Cure of the Morphia Habit.* Dr. Jennings has considerable justification for adding the new phrases to the title of the present edition. As he points out, the want of morphia gives rise, in one accustomed to take it habitually, to three kinds of symptoms —(1) A state of restlessness, and sometimes pain, due to lack of the artificial stimulus hitherto administered to the brain cells; (2) feebleness of the cardiac action and of the circulatory system in general; and (3) excessive secretion of acid in the stomach. To meet these three indications, Dr. Jennings employs a therapeutic triad—(1) Hot-air baths, (2) cardiac tonics, and (3) bicarbonate of soda. For the many details of treatment, we refer the reader to the book itself, which ought to be read by every practitioner who may be called upon to treat so distressing a complaint as the morphia habit. The illustrative cases are very striking, and the book as a whole is interesting and well written. Dr. Jennings' therapeutic discoveries have laid an important branch of suffering humanity under a deep debt of gratitude. With over two hundred pages, a book of such worth ought to have an index.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

NERVOUS DISEASES AND INSANITY.

By Dr. R. S. STEWART.

Suprarenal Extract in the Treatment of Mental Diseases. Dawson (*The Journal of Mental Science*, October, 1901).—From his experience of the use of this drug, this writer draws the following conclusions:—The chief physiological action of extracts of the suprarenal gland is increase of arterial pressure, but they also produce a tonic effect upon the heart and on muscle generally, and, possibly, some diminution of metabolism. Owing to the transitory nature of the effects produced by intravenous injection of the extract, suprarenal must be given by the mouth if any prolonged action is to be obtained. Both for *à priori* reasons and as a matter of experience, it appears to be indicated in conditions of excitement and exaltation, in which state the blood-pressure is usually found to be lowered. Administration for a certain length of time will probably be found necessary in most cases in order to produce any marked effect, at least, where excitement is violent. Although the state of the blood-pressure, as a rule, forms a convenient indication for its use, high pressure does not absolutely contraindicate it if there is some reason to think that it is not associated with the mental state, as an abnormally high pressure may still be lower than the average of an individual case. Suprarenal extract seems unlikely to be of benefit in cases of melancholia, and where there is much stupor. It, therefore, seems probable on the whole that the form of insanity in which it will be found most useful is acute mania of fairly recent origin uncomplicated by stupor.

The Physiological Effects of Rachicocainisation. Pitres and Abadie (*Archives de Neurologie*, October, 1901).—In an extensive research into this method of treatment, the following phenomena were observed by these writers. They insist that the analgesia consecutive to the lumbar subarachnoid injection of cocain is not due, as has been asserted, to the direct action of the drug upon the cord, and to a functional modification consecutive to this last, but to an alteration of the conductivity of the sensory roots. The analgesia is installed progressively, and not all at once. There is at first a slight hypoalgesia, which increases gradually, and finally merges into analgesia. In the same way, when the sensibility reappears, complete analgesia succeeds hypoalgesia, which becomes gradually less up to the complete return of sensibility. Cutaneous sensibility to pain is the first to disappear; sensibility to temperature is the next to be abolished; then sensibility to pressure is lost, and the last to disappear is sensibility to contact. The sensation of tickling of the soles is perceived for a long time, but it produces no reflex movements, and, during the invading hypoalgesia, there is manifest error of localisation. In four instances, electric sensibility—previously normal—was abolished, and deep sensibility was abolished in proportion to the degree of cutaneous analgesia. The notion of the position of the limbs is in general preserved, and the deep visceral sensibilities appear never to be obliterated.

Abolition of the cutaneous reflexes is the rule in all the analgesic regions, and the order of this abolition follows exactly the invasion of the analgesic zones. Except in cases of tabes, the tendon reflexes are always modified. If normal, they become exaggerated during the action of the cocain. This exaggeration is progressive, sometimes preceded by a short period of diminution, and attains its maximum at the moment of greatest extension of the analgesia;

it diminishes gradually until the reflexes take on their former normal characters. If, on the contrary, the reflexes are exaggerated before the action of the cocain, there is observed a progressive diminution, which may even go as far as complete abolition. Lastly, if the reflexes are feeble, they gradually diminish, and are sometimes abolished.

With moderate doses of the drug no sphincter troubles were noted, and in six out of seventeen of the cases, repeated transitory erections were observed.

In one-third of the cases, there occurred epileptoid trepidation; independently of this, and only in hysterical subjects, trembling of the lower limbs, sometimes extending to the upper extremities, and even to the whole body; and the patients complained of heaviness of the limbs and inability to move them, though resistance to passive movement remained unaffected. The maintenance of the upright posture was always possible, and no motor incoördination was noted.

In the vaso-motor domain no striking phenomena were observed, except that the application of mustard produced no tumefaction, but in a very large number of cases there was abundant sweating, affecting almost exclusively the upper part of the trunk.

Rachicocainisation—Fatal Results. Legueu (*Le Progrès Medical*, 16th November, 1901).—The first case is that of a man who was the subject of emphysema, heart disease, and atheroma, and who was about to undergo operation for ruptured triceps tendon. Ten minutes after the injection of 0·02 grammes of cocain into the lumbar arachnoid, the patient presented signs of agitation, there were some convulsive movements, and death occurred almost instantaneously.

The second was a case of strangulated hernia, with very grave general condition. Six minutes after the injection, the patient presented signs of anxiety, with cold sweats, dilatation of the pupil, and vomiting, and in six minutes more was dead. The autopsy revealed arrest of the heart in systole, some pulmonary infarcts, nothing in the nervous system, and only trifling lesions in the kidneys, and death was considered to be due to bulbar syncope.

Rachicocainisation. Villar (*Le Progrès Medical*, 23rd November, 1901).—On two occasions in a first series of thirty-six injections—the operation of laparotomy—the analgesia was incomplete; in all the others it was perfect. The regions operated upon were the abdomen, the lower limbs, the genital organs, and the anus. No serious accident occurred. The analgesia ascended generally as high as the costal border; sometimes it reached as high as the neck and arms. In a second series of forty cases, there was likewise no accident. Lumbar cocainisation is not, says this writer, a method of choice, but it has no gravity, and it presents certain advantages, the non-necessity of an assistant, indications in patients affected with thoracic diseases, the possibility of the patient's assistance in certain circumstances, absence of shock.

Lumbar Puncture and Fractures of the Skull. Poirier (*Le Progrès Medical*, 14th December, 1901).—This is a case in which the fracture was unrecognised, and the symptoms were attributed to meningitis. Lumbar puncture gave exit to about 35 grammes of a deeply blood-tinted fluid issuing in a powerful jet, followed by immediate and considerable amelioration in the condition of the patient. Some days after, the symptoms of the fracture became apparent, and, eleven days after, the patient left the hospital recovered.

Generalised Sarcoma of the Spinal Pia Mater Simulating Tubercular Meningitis. Lereboullet (*Le Progrès Medical*, 4th January, 1902).—A child, 4 years old, had a polypus removed from the ear. The growth recurred, and at the same time secondary sarcomatous growths appeared in the cervical ganglia. Then symptoms pointing to tubercular meningitis supervened, headache, vomiting, retraction of the abdomen, rigidity of the neck, irregularity of the pulse. The possibility of error was avoided by the indications afforded by lumbar puncture. There were neither lymphocytes, nor lowering of the cryoscopic point, nor permeability to iodine. Death occurred fifteen days after the appearance of the symptoms of meningitis, and two and a half months after the occurrence of the auricular symptoms, and the autopsy revealed the existence of a sarcomatous growth starting from the left auditory nerve, invading several of the cranial nerves, and extending throughout the whole length of the spinal pia mater.

MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

Pulmonary Incompetence in Mitral Stenosis.—The following case was reported by Dr. Brockbank in *The Medical Chronicle* for October, 1901:—

The patient, a female, aged 19, was admitted to hospital with shortness of breath and palpitation. These symptoms had set in three years before, but up till that time the patient had enjoyed good health. There was no history of rheumatism, chorea, or scarlet fever. On auscultation over the precordial area a presystolic murmur with accentuated double second sound was heard at the apex. In the tricuspid area a faint systolic murmur was heard. The sounds at the aortic cartilage, though accentuated, were pure. In the pulmonic area (third left interspace, three-quarters of an inch from left border of sternum) the sounds were also accentuated; but there was, in addition, a distinct diastolic murmur at the end of the double second sound. This murmur was strictly localised to the pulmonary area.

The whole subject of pulmonary incompetence in mitral stenosis is shortly discussed by the same author in an abstract in the September number of *The Medical Chronicle*. Sixteen other cases are there referred to, and we are told that in nine of these the diagnosis was confirmed by a *post-mortem* examination. It is pointed out how frequently we find degenerative changes in the walls of the pulmonary artery in cases of mitral stenosis, due, doubtless, to the long-continued high tension in the pulmonary circulation in that disease. As a result of these changes the pulmonary artery and its orifice become dilated, and so we have the regurgitant murmur as above recorded.

A Case of Acute Leukæmia. By Dr. J. F. Wilkinson (*Intercolonial Medical Journal of Australasia*, August, 1901).—The patient was a girl, aged 16 years. Her illness set in with pain in the left side, which, however, at first was not sufficiently severe to confine her to bed. A few days later the pain increased in severity, spread to the epigastric region, and she now seemed to be pretty ill. She was first seen by Dr. Wilkinson a fortnight after the onset of the above symptoms. She was then pale, anæmic, and anxious-looking. The abdomen was distended and very rigid, especially above the level of the umbilicus. The liver was enlarged down to a level with the umbilicus, and the spleen reached to the iliac crest. The glands in the submaxillary region, in the neck, axillæ, and groins were enlarged and hard, but not matted together. There was a patch of pneumonia at the base of the left lung; the heart sounds were pure, and the urine free from albumen. Examination of the blood showed great increase in number of the white blood corpuscles, there being 110,000 per cmm. These were mostly lymphocytes, and there were but few polynuclear and no eosinophile leucocytes. There was but little diminution in the number of red corpuscles; a few normoblasts were to be seen. For the next week (third week of illness) the patient remained fairly well, and took milk freely. But petechiæ had appeared on the abdominal wall, and there was some epistaxis. During the fourth week the tenderness of the abdomen had increased, and the bulging in the splenic area was considerable. The glands at the angle of the jaw were also very tender. Petechiæ were now present in other parts of the body; the breathing, too, had become somewhat laboured, and the patient had a rather livid appearance. A loud V.S. murmur was heard in the pulmonary area. Coma ultimately supervened, and the patient died within four weeks of the first onset of the symptoms. During the illness the temperature ranged from 99° to 100° F., the pulse from 116 to 136.

At the *post-mortem* examination enlarged glands were found in the submaxillary, cervical, sub-occipital, axillary, and inguinal regions. The mediastinal, mesenteric, and retro-peritoneal glands were likewise slightly increased in size. The thymus gland was greatly enlarged, and possibly exerted pressure on the pulmonary artery. The liver weighed 7½ pounds, and extended from the fourth rib to below the umbilicus. Its capsule was much thickened and adherent to the parietes, diaphragm, spleen, and stomach by recent lymphy adhesions. There were numerous hæmorrhages into the liver substance. The spleen weighed 5½ pounds; its capsule was also thickened and adherent to surrounding structures. It contained no hæmorrhages. The heart was healthy, and the lungs, except for a patch of broncho-pneumonia at the left base, were also healthy. The kidneys were considerably enlarged, pale, and mottled throughout with hæmorrhages. Both large and small intestines showed hæmorrhagic patches of large size underneath the peritoneal coat. Small hæmorrhages were also seen in many of the other tissues of the body. The pelvic organs were apparently normal.

A Case of Myasthenia Gravis (Paralysie Asthénique Bulbo-Spinale).—The following case was shown by M. Leclerc at a meeting of the Sociéte Nationale de Médicine de Lyon on 2nd December, 1901.

The patient was a woman, aged 24, a seamstress by occupation. Her previous history and family history were excellent, and there was no history of alcoholism or syphilis among any of her relations. The paralysis came on without any known cause about a year and a half before she came under observation. She first found that she was seeing things double, and that she had difficulty in looking at objects on either side of her. She also at this time experienced feebleness in the arms, and later on in both legs. When examined by Dr. Leclerc, there was seen to be double ophthalmoplegia, complete for the external movements of the right eye, but incomplete for the other movements of the eyeballs. Both pupils reacted to light, but not to accommodation. There was slight double ptosis. The fields of vision were normal, as were also the ophthalmoscopic appearances of the fundi. The muscles of the face and tongue were unaffected, but the muscles of mastication frequently showed signs of feebleness. The patient would get on quite well at the commencement of a meal, but towards the finish the muscles moving the jaw would get so fatigued that she often had to leave the remainder uneaten. At times there was also paresis of the muscles of deglutition, and, when trying to swallow, food would return by the anterior nares. There was likewise some feebleness in the muscles of the neck. There was marked paresis of the muscles of the upper arms, especially the deltoids; this was less marked in the muscles of the legs. The patient walked slowly and with hesitation, but fairly well, but when going up stairs she had considerable difficulty. She would get up the first few steps quite well, then she seemed to be unable to raise the feet up another step, and she would sink down on to her knees. This feebleness in the muscles varied considerably from day to day, the patient explaining that she had "good days and bad days." Fatigue always increased the paralysis, and the muscles were very readily fatigued. There was no muscular atrophy, no changes in the superficial or deep reflexes, no signs of hysteria, and no involvement of sensation.

In discussing the case, Dr. Leclerc points out that, in the cases similar to the above that have come to *post-mortem* examination, no lesion, macroscopic or microscopic, has yet been discovered. The disease is therefore not of the nature of a bulbar paralysis. It is rather a functional trouble in which the motor functions of the ganglion cells have become affected, while their trophic functions have remained unimpaired. In some cases, however, certain muscles do show a certain amount of atrophy; and in these, therefore, both the trophic and motor functions of the corresponding ganglion cells must have become involved.—(*Lyon Médical*, 15th December, 1901.)

DISEASES OF THE EAR.

By Dr. WALKER DOWNIE.

On the Therapeutic Value of Vibratory Massage of the Drumhead. By Dr. Schwabach, Berlin.—In this paper Dr. Schwabach gives the results obtained by him from the use of vibratory massage in cases of (1) middle-ear sclerosis, (2) simple chronic middle-ear catarrh, and (3) in sub-acute middle-ear catarrh.

The apparatus which he employed is that recommended by Breitung, and is driven by an electric motor.

Among 43 cases of sclerosis of the middle-ear, an improvement in hearing was obtained in only 4·9 per cent of the cases in which impairment of hearing had not yet reached a high degree, whereas a disappearance of the subjective noises occurred in 28·3 per cent. In simple chronic middle-ear catarrh better results are said to have been obtained: 39·1 per cent showed improvement in hearing, and 45·7 per cent showed an improvement in the subjective noises. And similar beneficial results are said to have been obtained in cases of sub-acute middle-ear catarrh—*i.e.*, permanent improvement of both deafness and tinnitus in about 44 per cent.

Where the usual methods of treatment of chronic middle-ear affections have failed, he thinks vibratory massage may be found useful; but he also thinks that it does very little good in that form of chronic deafness ("sclerosis of the sound-conducting apparatus") for which it has been particularly recommended.

Dr. Schwabach thinks that vibratory massage is to be recommended in cases of simple chronic hypertrophic middle-ear catarrh with dulness and retraction of the drumhead, also in sub-acute middle-ear catarrh and some others which he mentions. In pronounced cases of "idiopathic affections of the sound-perception apparatus," he says such massage promises no results whatever.—(*Archives of Otology*, August-October, 1901.)

The Histology of Aural Polypi. By Dr. G. Brühl, Berlin.—Dr. Brühl here describes in detail the methods which he followed in the histological examination of 60 aural polypi. It is generally accepted by aurists that all aural polypi are at first granulation tumours. Of the 60 polypi examined and reported upon, Dr. Brühl found 47 polypoid granulations, 8 fibromas, and 5 myxo-fibromas. Thus, 78 per cent of the whole number were polypoid granulations. Hence, he says, it seems essential to regard all aural polypi as various stages of the same process. There are young aural polypi which have the character of fibromas, and old polypi which are polypoid granulations. Polypoid granulations remain as such; fibromas have from the very beginning a tendency to become fibromas.—(*Archives of Otology*, August-October, 1901.)

A True Cholesteatoma in the Posterior Cranial Fossa—Infected by Middle-Ear Suppuration—Operation—Recovery. By Dr. O. Körner, Rostock.—A man, aged 41, had had severe pain over the whole left side of the head for years. In March, 1900, he had influenza, followed by profuse discharge from left ear. In May he was well, aural discharge had ceased, and he resumed work. In June headaches returned, and with their return patient observed a painful swelling on the left side of the occipital region. Hearing on left side was defective: left auditory canal was unchanged, the tympanic membrane was dull and thickened, and bulged posteriorly. There was no disturbance of equilibrium, though there were often neuritis and beginning venous stasis in both eyes.

There was no rise in temperature, and speech and facial movements were undisturbed. On palpating the swelling over the occipital region a triangular defect in the bone could be felt, having sharp edges; but no pulsation could be felt. There was no apparent change in the mastoid region.

When this swelling was incised, half an ounce of odourless pus escaped. Protruding from the triangular opening in the bone was a shining, pearly mass, which came away in layers when scraped with a spoon. Granulations covered the edges of the opening. The whole mass, equal in size to two hen's eggs, was removed by scraping. The bone covering the mass was like paper over a large area of the parietal, temporal, and occipital bones, and the diploe had entirely disappeared. The lower part of the occipital lobe and the cerebellar hemispheres were much displaced and compressed, and the dura to a considerable extent was covered with coarse granulations. The cavity was lightly packed with iodoform gauze, and a strip brought out through the auditory canal..

This extraordinarily large cholesteatoma lay in the posterior cranial fossa, and extended from the petrous portion of the temporal bone to the torcular Herophili. The bones in contact with the growth were everywhere thinned, and in one place perforated; and the mastoid cells were also opened. It had been slow of growth, and it took four weeks for the brain and cerebellum to expand in the cavity to their normal proportions. On microscopic examination, the tumour was found to be a cholesteatoma.—(*Archives of Otology*, August-October, 1901.)

Books, Pamphlets, &c., Received.

Directions for Class Work in Practical Physiology, by E. A. Schäfer, LL.D., F.R.S. With Diagrams. London: Longmans, Green & Co. 1901. (3s. net)

Nursing: General, Medical, and Surgical, with an Appendix on Sick-Room Cookery, by Wilfred J. Hadley, M.D., F.R.C.P., F.R.C.S. London: J. & A. Churchill. 1902. (3s. 6d.)

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Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences, Edited by Hobart Amory Hare, M.D., Assisted by H. R. M. Landis, M.D. Vol. III (September, 1901). London: Henry Kimpton. 1901.

Therapeutics: Its Principles and Practice, by Horatio C. Wood, M.D. Eleventh Edition. Remodelled and in greater part Rewritten. London: Smith, Elder & Co. 1902.

Archives of Neurology and Psychopathology. Vol. III, No. 3. Utica: State Hospitals Press. 1900.

Quain's Dictionary of Medicine, by Various Writers. Third Edition. Edited by W. Montague Murray, M.D., F.R.C.P. London: Longmans, Green & Co. 1902. (21s. net.)

The Bradshaw Lecture on Prognosis in Relation to Disease of the Nervous System, by Judson S. Bury, M.D. Lond., F.R.C.P. Manchester: Sherratt & Hughes. 1902. (2s.)

Nothnagel's Encyclopædia of Practical Medicine (Saunders' English Edition). Vol. I: Typhoid Fever and Typhus Fever, by Dr. H. Curschmann. Edited, with Additions, by William Osler, M.D. Authorised Translation. London: W. B. Saunders & Co. (To be completed in 10 vols., each vol. 21s.)

The Edinburgh Medical Journal, Edited by G. A. Gibson, M.D. F.R.C.P. Edin. New Series. Vol. X. Edinburgh: Young J. Pentland. 1901.

The Roentgen Rays in Medicine and Surgery as an Aid in Diagnosis and as a Therapeutic Agent, by Francis H. Williams, M.D. With 391 Illustrations. New York: The Macmillan Co. 1901. (25s. net.)

The Healing of Nerves, by Charles A. Ballance, M.S., F.R.C.S., and Purves Stewart, M.A., M.D., M.R.C.P. Illustrated by 16 Plates and One Figure in the Text. London: Macmillan & Co., Limited. 1901. (12s. 6d. net.)

A Text-Book of Pathology, for the Use of Students and Practitioners of Medicine and Surgery, Edited by Ludvig Hektoen, M.D., and David Riesman, M.D. With 443 Illustrations, 66 of them in Colours. In Two Vols. London: W. B. Saunders & Co. 1901. (35s.)

A Brief Manual of Prescription Writing in Latin or English, for the Use of Physicians, Pharmacists, and Medical and Pharmacal Students, by M. L. Neff, A.M., M.D. Philadelphia: F. A. Davis Co. 1901. (75 cents.)

Elementary Bandaging and Surgical Dressing, for the Use of Dressers and Nurses, by the late Walter Pye, F.R.C.S.; Revised by Thos. Carwardine, M.S., F.R.C.S. Ninth Edition. Bristol: John Wright & Co. 1901. (2s.)

"First Aid" to the Injured and Sick, An Advanced Ambulance Handbook, by F. J. Warwick, B.A., M.B. Cantab., M.R.C.S., L.S.A., and A. C. Tunstall, M.D., F.R.C.S. Edin. Seventh Thousand. Bristol: John Wright & Co. 1901. (2s. 6d.)

A Short Manual for Monthly Nurses, by Charles J. Cullingworth, M.D., F.R.C.P. Fifth Edition. Revised by the Author, with the assistance of M. A. Atkinson. London: J. & A. Churchill. 1901. (1s. 6d.)

A Short Practice of Midwifery for Nurses, by Henry Jellett, B.A., M.D., B.Ch. With 67 Illustrations and an Appendix. London: J. & A. Churchill. 1901. (6s.)

Rough Notes on Remedies, by William Murray, M.D., F.R.C.P. Lond. Fourth Edition. London: H. K. Lewis. 1901. (4s. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 18TH JANUARY, 1902.

	WEEK ENDING			
	Dec. 28.	Jan. 4.	Jan. 11.	Jan. 18.
Mean temperature, . .	35·3°	44·3°	45·2°	36·4°
Mean range of temperature between day and night, .	7·8°	7·1°	7·0°	13·4°
Number of days on which rain fell, ...	4	7	6	3
Amount of rainfall, . ins.	0·50	1·71	0·28	0·08
Deaths registered, . . .	365	355	306	351
Death-rates, ...	24·8	23·8	20·5	23·5
Zymotic death-rates, . .	3·5	3·0	2·3	2·7
Pulmonary death-rates, .	7·6	8·2	7·4	7·7
DEATHS—				
Under 1 year, . . .	68	57	59	81
60 years and upwards, .	80	92	60	73
DEATHS FROM—				
Small-pox, ...	...	...	...	...
Measles, ...	22	24	19	20
Scarlet fever, ...	4	2	...	1
Diphtheria, ...	1	...	1	1
Whooping-cough, . .	6	10	2	9
Fever, ...	3	5	2	2
Diarrhœa, ...	15	4	11	6
Croup and laryngitis, .	2	...	...	1
Bronchitis, pneumonia, and pleurisy, ...	96	95	74	98
CASES REPORTED—				
Small-pox, ...	3	28	4	9
Diphtheria and membranous croup, ...	14	13	10	8
Erysipelas, ...	33	22	42	37
Scarlet fever, ...	50	38	55	78
Typhus fever, ...	...	...	...	2
Enteric fever, ...	19	23	21	17
Continued fever, . . .	1	...	...	1
Puerperal fever, . . .	1	2	...	1
Measles,*	526	185	582	515

* Measles is not notifiable.

SANITARY CHAMBERS,
GLASGOW, *24th January, 1902.*

THE

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ORIGINAL ARTICLES.

THE TREATMENT OF UTERINE FIBRO-MYOMA.[1]

By JOHN EDGAR, M.A., B.Sc., M.B., C.M., F.F.P.S.G.,
Professor of Midwifery and Diseases of Women, Anderson's College Medical School; Surgeon, Glasgow Samaritan Hospital for Women.

Fibro-myoma is the most common new-formation found in the uterus. Most of the text-books quote Bayle's statistics as to its frequency—20 per cent of all women over 35 years of age, and those of Klob, 40 per cent of all women over 50 years of age. These figures are in all probability too high. Having carefully examined the reports of all the cases admitted into my wards in the Glasgow Samaritan Hospital for Women during the last five years, I find that the proportion of cases suffering from uterine fibro-myoma amounts to 5 per cent. This percentage, it seems to me, represents fairly accurately, from a clinical point of view at all events, the frequency of this affection.

With regard to the treatment of these tumours, there are four methods which will require consideration, viz., the expectant, the medical, the electrical, and the surgical.

I. *The expectant treatment.*—By this is meant leaving the case to nature, while at the same time watching carefully lest symptoms should arise which would necessitate some special treatment. This is the method which should be adopted in all cases in which the tumour is quiescent, and is causing no symptoms or trifling symptoms. Not only operative measures, but also drugs, should be avoided, for the simple reason that drugs can do no good in such cases, but may do harm, inasmuch as they tend to impair the digestion and to keep the patient brooding over her trouble. It is best, indeed, to keep her in ignorance of the fact that she possesses a tumour, provided she can be kept under observation, and provided a reliable relative is informed of its existence.

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[1] Introduction to a discussion by the Glasgow Obstetrical and Gynæcological Society, 18th December, 1901.

I am aware that a few surgeons advise that all fibro-myomata should be removed, for the reason that, even if they do not cause symptoms at the time, they may afterwards prove dangerous, and that the less complicated the case, the safer the operation. The weak point in this deduction lies in the word "may." If it were "must," as in the case of ovarian cysts, then I should agree to it at once; but, as we all know, there are very many cases of fibro-myoma which remain stationary and never cause any appreciable amount of suffering. The number of such cases is sufficiently large to justify us in refraining from surgical measures, unless special indications are present.

The only exception I should make would be a case which was complicated with pregnancy. Such a case would require careful consideration. If we were satisfied that the tumour would be likely to become dangerous during the course of the pregnancy or during labour, we should then be justified in interfering. The operation selected would depend on the case. We might empty the uterus, but such treatment is not altogether devoid of danger. Another objection to it is that pregnancy might again take place, and so we should have a repetition of the difficulty. I should prefer, therefore, either myomectomy or hysterectomy, according to the number and variety of tumours present.

In illustration of this, let me briefly describe three cases which occurred in my practice lately. In the first, I hesitated for a time between hysterectomy and the expectant treatment, but finally decided on the latter, with a gratifying result. Patient had a perfectly normal confinement at term. In the second, the tumours were so large that hysterectomy was absolutely necessary. In the remaining case, the patient had been already confined, but with so much difficulty that I considered it would be dangerous to allow her to become again pregnant. In this case myomectomy was the operation selected.

CASE I. *Multiple fibro-myomata—Uterus gravid—Delivery at term normal.*—Mrs. C., æt. 34, was admitted into the Samaritan Hospital on 14th December, 1900. Two abortions; last, four years ago. Menorrhagia. Three months' amenorrhœa (except for slight bleeding for one day two weeks ago). Pregnant. Severe pain in lower abdomen, especially in left iliac region. Frequent micturition. Painful defæcation.

Per vaginam, gravid uterus reaching to umbilicus. Several large fibro-myomata, the largest situated at pelvic brim on right side. Kept her in bed under observation till her dismissal on 22nd January, 1901. Pain ceased. With growth of uterus, the tumour at the pelvic brim rose out of brim.

Subsequently, her medical attendant wrote to me that she had a perfectly normal confinement in June.

To-day (18th December, 1901) she writes to say that she is feeling well.

CASE II. *Large fibro-myomata of four months' gravid uterus—Large hæmatoma of left ovary—Supravaginal amputation of uterus—Recovery.*—Mrs. R., æt. 37, primigravida. was admitted into the Samaritan Hospital on 25th January, 1900. Menstruation normal. Pain in lower abdomen and abdominal swelling from July, 1899. Amenorrhœa from beginning of October (four months), with rapid increase in size of abdomen and in degree of pain. Giddiness; micturition frequent and painful; morning sickness.

Examination.—Abdomen very large. Circumference at umbilicus, 47 inches. Three large fibro-myomata can be felt, one in the left iliac region, a second in right lumbar region, reaching up to the right costal margin, and a third in the umbilical region, extending into the left hypochondrium. Several smaller masses also felt. Cervix softened and lower uterine segment distended. Linea nigra. Lineæ gravidarum. Umbilicus protuberant. Mammary secretion.

30th January.—Abdominal section. Supravaginal amputation of uterus. Several adhesions had to be ligatured and cut. Hæmatoma of left ovary, size of an orange, embedded in adhesions in pouch of Douglas. Fœtus measured 6½ inches; alive at time of operation. Good recovery.

17th March.—Dismissed well.

I heard from patient's doctor a couple of months ago that she is keeping well.

CASE III. *Subperitoneal fibro-myoma in pouch of Douglas causing dystocia—Both ovaries cystic—Removal of tumour by separating adhesions—No pedicle—Removal of appendages—Recovery.*—Mrs. M'F., æt. 37, vi-para, was admitted into the Samaritan Hospital on 27th November, 1899. Menstruation normal; no pain; micturition normal; weak; very anæmic; emaciated. First five labours normal. Had severe ante-partum hæmorrhage and extremely difficult labour in September, 1898, owing to presence of tumour in Douglas' pouch. Forceps used. Child died with convulsions on third day. I saw her three months afterwards, but she was so weak that operation was out of the question. Tonics were given, and she was instructed to feed well, and to avoid sexual intercourse lest she should become again pregnant. Her medical attendant stated that in July, 1899, she had an attack of pelvic peritonitis. Tumour, movable prior to this, was fixed afterwards.

2nd December.—Abdominal section. Coil of intestine firmly adherent to fundus uteri and upper surface of tumour. After separating adhesions, tumour was removed from the pouch of Douglas. No pedicle found. Tumour was partially necrosed. Both ovaries were cystic, and were removed. Good recovery.

6th January, 1900.—Dismissed well.

17th December, 1901.—Feels well. No pain. Not anæmic. Much stronger. Has not menstruated, but there have been none of the usual troubles of the menopause. Sexual desire as before. Abdominal cicatrix firm.

II. *Medical treatment.*—This has to be considered from two points of view, the curative and the palliative. As already hinted, no form of medical treatment yet devised has been found successful as a means of cure. No doubt in some cases in which ergot has been administered, a submucous tumour has sloughed and been extruded, but even granting that this was due to the drug, is it right to expose the patient to the risks of hæmorrhage and sepsis entailed by such treatment, when a simple operation would have at once relieved her? All that one can and should expect from medical treatment, such as the administration of ergot, hydrastis, calcium chloride, thyroid gland, mammary gland, iodide or bromide of potassium, &c., or a course of waters and baths at Kreuznach or Woodhall Spa, &c., would be a diminution of hæmorrhage or pain, and, possibly, if the treatment be prolonged, a slight decrease in the size of the tumour, with consequent relief from pressure symptoms. Such results are, however, by no means certain, and even when obtained are too often only temporary. One patient whom I saw last summer had taken ergot and ergotine continuously for three years on account of metrorrhagia due to a uterine fibro-myoma, but in spite of this the bleeding had steadily increased. Curettage at once relieved her, and, so far, the bleeding has not recurred. It is to be remembered, also, while estimating the value of any form of medical treatment, that variations as regards hæmorrhage, pressure symptoms, and size of the tumour often occur spontaneously, so that such treatment may frequently receive unmerited praise or blame.

The cases which are suitable for medical treatment are those in which the symptoms are moderate and can be controlled, and in which the tumour is remaining stationary in size or is becoming smaller. If, on the other hand, the symptoms are not readily controlled, or the tumour is steadily growing larger, I should have no hesitation in adopting surgical measures. If the patient were near the menopause, I should be tempted to defer operation for a longer period, but in such a case one must remember that the menopause is generally delayed, and that fibro-myomata do not always diminish in size after the climacteric.

In deciding between the medical and the surgical treatment of fibro-myomata, it is well to bear in mind that the mortality after operation is now much lower than formerly, and that this is due not only to improved surgical methods, but also to the fact that recourse is now had to operative measures much earlier than was formerly the case. In the days when the mortality in the hands of the surgeon was high, it was but natural that men should minimise the sufferings and dangers entailed by leaving cases to nature, but it is now widely recognised that fibro-myomata are much more often fatal, directly and indirectly, than was once imagined. I have known several cases where timid physicians have allowed their patient to die rather than counsel them early to seek operative aid.

III. *Electrical treatment.*—This might be regarded as one form of medical treatment, or as lying between the medical and surgical methods. When Apostoli established it on scientific lines, and published his cases in 1884, it was thought by some, and more especially by Keith, that a panacea had at last been discovered which would render surgical treatment rarely necessary. Now it is altogether discredited by many, perhaps somewhat unjustly.

Various reasons may be given for the present attitude towards the Apostoli treatment. These are the natural reaction after the excess of enthusiasm shown by its devotees; the discovery that it is not a means of cure, but only a palliative remedy, and that the arrest of hæmorrhage and diminution in the size of the tumour, when obtained, is often only temporary; and, lastly, the bad results obtained by many, and ascribed by them to the electrical treatment, but really due to improper methods, want of care in securing asepsis, or the injudicious selection of cases. Cases unsuitable for the treatment are—(1) those complicated with pregnancy, inflammatory affections of the appendages, or hæmatocele; and (2) fibrocysts, polypi, and subperitoneal fibro-myomata.

While assisting Dr. Stirton several years ago, I had a considerable experience of this form of treatment. I kept the patients under observation for some time afterwards, and, as a result, I have been led to the conclusion that the Apostoli treatment, if used at all, should be reserved for cases in which hæmorrhage is the chief symptom, provided—(1) no contra-indication exists, (2) ordinary medical treatment has failed, and (3) the tumour is not fibro-cystic nor polypoidal. The cases especially suitable are those which are near the menopause, and those which are for some reason unsuitable for operation. When operation is at all likely to be ultimately required, the danger of delay must be borne in mind.

The strength of current which we employed was generally 20 to 40 milliamperes at the first sitting, and this was afterwards increased to 100 or 150 milliamperes, according to the powers of the patient to bear the current. We always stopped short of causing her actual pain. The sittings were twice weekly, and lasted five to ten minutes. Never more than from twenty to thirty sittings were given consecutively. It is important to exercise thorough aseptic precautions, and to keep the patient resting on a couch or bed for some hours after each *séance.* The current must be turned on and off gradually, to prevent the patient feeling an electric shock.

IV. *Surgical treatment.*—There are many varieties of surgical treatment, but they may be all included under four heads:—

1. Curettage of the endometrium.
2. Operations intended to lessen the nutrition of the tumour.
3. Removal of the tumour alone.
4. Removal of the uterus, in whole or in part, along with the tumour.

1. *Curettage.*—This is only a palliative for hæmorrhage and leucorrhœa. When the fibro-myoma is submucous or intramural the endometrium is generally thickened, and forms almost the only source of the hæmorrhage which is so frequently a prominent symptom of these varieties of the tumour. It can be readily understood, therefore, that curettage of this thickened endometrium would help matters, at least temporarily.

The cases for which it is specially suitable are the same as those which have been already mentioned as likely to be relieved by the electrical treatment. I have tried it in several cases, in some of them with marked benefit. One of these was a patient whom I curetted on 19th November, 1898, for metrorrhagia of six months' duration. Before the operation she had been bleeding continuously for three and a half months. The cause was found to be a small sessile submucous fibro-myoma near the left uterine cornu. I saw this patient to-day, and found her uterus greatly diminished in size. She stated that after the curettage menstruation was normal in amount and periodicity for a year, then recurred at longer intervals, and finally ceased altogether six months ago.

2. *Operations intended to lessen the nutrition of the tumour.*—Under this head may be classed (*a*) removal of the uterine appendages as first advocàted by Hegar and Tait, and (*b*) various methods of ligature of the uterine arteries. These operations are chiefly of use in hæmorrhagic cases, but they are not always successful, and they are not always easy of performance. They were recommended in the days when the mortality after myomectomy and hysterectomy was so high, but most surgeons now perform them rarely or not at all. I have never had recourse to them in the treatment of fibro-myoma. When the tumour is fibro-cystic or pedunculated, whether submucous or subperitoneal, they are useless. In one case in which I removed four subperitoneal fibro-myomata, a colleague in Glasgow had previously removed both appendages, not, however, because of the tumours, but because the appendages were themselves diseased. The patient was not relieved until the tumours were taken away.

3. *Removal of the tumour alone* (*myomectomy*).—Cases suitable for this form of treatment are polypi, sessile submucous, and pedunculated subperitoneal fibro-myomata, and, according to some surgeons, also some cases of intra-mural and sessile subperitoneal fibro-myomata.

Polypi, if protruding through the os uteri, should be removed by simple torsion, or, if the pedicle be thick, by torsion combined with snipping. In some text-books it is still advised to ligature the pedicle before cutting it, or to cut through it with an écraseur or a galvano-caustic wire in order to prevent hæmorrhage, but the fear of hæmorrhage has been proved to be unfounded. I have never seen any which could not be easily controlled by a tamponade of iodoform gauze. The following case may be cited as an illustration chiefly on account of its interest:—

CASE IV.—*Uterine polypus simulating inversion of uterus —Removed by torsion combined with snipping—Recovery.*—Mrs. J., æt. 41, vii-para, was admitted into the Samaritan Hospital on 16th January, 1897. Menorrhagia for eighteen months, getting worse. Purulent leucorrhœa. Very anæmic. Patient was sent in as a case of inversion of uterus.

Per vaginam, sloughing tumour, size of apple, found in vagina, protruding through os. Finger could be passed into cervical canal. Pedicle, one and a half inch thick, was attached to anterior and right surface of corpus uteri, which was sinistroverted and retroverted owing to dragging of tumour. Owing to the presence of the tumour in the vagina, and the position of the corpus uteri, it was difficult to reach the latter, hence the ease with which a mistaken diagnosis of inverted uterus had been made.

22nd January.—Polypus removed by torsion of pedicle, combined with snipping. As tumour was sloughing, curettage was not performed till a week later. Uterus packed with iodoform gauze.

12th February.—Dismissed well.

When the polypus is still in the uterus, and too large to be brought through the os uteri entire, it should be cut by scissors and removed piece by piece. This is called morcellation of the tumour, or morcellement.

A sessile submucous tumour should be enucleated and delivered entire or by morcellement, according to whether the os is sufficiently dilated or not. It is foolish to attempt the delivery of a large tumour through the os in any other way than by morcellement. All the dilatation that is required is what is sufficient to admit one finger, or, at most, two fingers. The bleeding is comparatively slight, and is altogether from the cut edges of the capsule. It ceases when the tumour is delivered owing to retraction of the uterus. The following case was operated upon in this way:—

CASE V.—*Sessile submucous fibro-myoma—Removed by morcellement—Recovery.*—Mrs. K., æt. 38, one child, fourteen years ago, was admitted into the Samaritan Hospital on 12th October, 1901. Menstruation normal till two years ago, when it became profuse. Dr. Russell curetted the uterus, with good effect, but eight weeks ago bleeding began again, and continued till admission. Pain in both iliac regions, especially in left. Feeling of weight. Profuse leucorrhœa.

Per vaginam, os dilated; sessile submucous myoma, size of a man's fist, attached to anterior wall of uterus. Several small subperitoneal fibro-myomata.

16th October.—Submucous tumour removed by morcellement, and uterus packed with iodoform gauze soaked with hazeline.

26th October.—Dismissed well.

20th November.—Returned to report herself. No more bleeding, but pain still present.

In removing submucous tumours, whether polypoid or sessile, the danger of partially inverting the uterus by dragging on the tumour, and then cutting into the uterine wall, must be guarded against. Another danger to be avoided is incomplete removal of a tumour. I remember a case in the practice of a colleague in which death occurred in consequence of this.

Sometimes one meets with a submucous myoma on the fundus of an inverted uterus. Such cases should be treated by enucleation of the tumour, and subsequent suture of the resulting wound, before attempting replacement. I have reported two cases of this kind in the *Glasgow Hospital Reports* for 1901. Occasionally reposition occurs spontaneously after removal of the tumour.

Cervical fibroids may sometimes be treated by enucleation, with or without morcellement, and subsequent suture of the wound. The following case is interesting on account of its rarity:—

CASE VI.—*Large fibro-myoma of anterior lip of os uteri—Removed by morcellement—Suture of wound—Recovery.*—Mrs. M., æt. 48, ii-para, was sent to me by Dr. Campbell, of Inverary, on 11th August, 1898. Metrorrhagia of two and a half years' duration. Very anæmic. Micturition frequent. Feeling of weight in pelvis.

Per vaginam, a fibro-myoma, of the size of a child's head, distended the vagina. The case was rather puzzling, because, owing to the size of the tumour, the posterior fornix could not be reached, while in front and at the sides no os could be made out; the anterior vaginal wall was in direct continuity with the tumour. At the time of the operation (morcellement of tumour), after half the tumour had been removed, the os externum was felt, and then seen, behind the upper part of the mass. It was not dilated. The sound passed 2½ inches. The tumour thus proved to be a fibro-myoma of the anterior lip of the os. After removing it, the resulting wound was sutured. It healed by first intention.

Pedunculated subperitoneal fibro-myomata should be treated by division of the pedicle, followed by ligature of vessels and suture of the peritoneal edges, unless where for some reason, such as the presence of additional intra-mural tumours, it is thought advisable to remove the uterus. Such treatment is more satisfactory than simple ligature and division of the pedicle. These cases are comparatively common.

Cases of *intra-mural or sessile subperitoneal fibro-myomata* are, I think, unsuitable for enucleation unless one feels satisfied that there are only one or two. There is always a risk of leaving one or more small tumours which may subsequently require to be removed, and, besides this, it has been found that the danger of enucleation of such tumours is greater than the danger of hysterectomy. For this reason Martin, one of the earliest advocates of enucleation, has practically abandoned the operation in such cases. The chief reason which can be given in its favour is that it is on conservative lines, but when it is advised that a large number of tumours should be removed from a uterus by this means—in one case Alexander of Liverpool removed 25 from a single uterus—the operation is surely conservatism gone mad. Of what use could such a mutilated organ be to the patient?

4. *Removal of the uterus, in whole or in part, along with the tumour.*—This includes supravaginal amputation of the uterus and hysterectomy proper, or, as it is sometimes called, pan-hysterectomy. The former operation can be done only by abdominal section; the latter by the abdomen, by the vagina, or by the combined method.

I have tried all of these methods, and think that supravaginal amputation is for most cases the best. The advantages are—(*a*) It is simpler and more quickly performed; (*b*) the risk is proportionately lessened; (*c*) the ureters are less likely to be injured; (*d*) the bases of the broad ligaments are left intact, so that the anatomical relations of the parts round the cervix are left undisturbed.

The plan I adopt is as follows:—Patient in Trendelenburg position. Open abdomen, and bring uterus forward through the incision. Ligature and cut the infundibulo-pelvic and round ligaments on each side. (For the last two or three years I have preserved the ovaries, if healthy. In many cases, however, I find the ovaries disorganised by blood or pus.) Next incise the peritoneum across the anterior surface of the uterus, and push it downwards a little together with the bladder. Catch the loose cellular tissue close to the upper portion of the cervix with two pairs of small pressure forceps, and cut between them towards the cervix. Continue this incision with knife or scissors through the upper part of the cervix. Seize the loose cellular tissue on the other side with another pair of forceps and cut above this. Remove the uterus. The cellular tissue at the sides of the stump (cervix), included between the blades of the forceps, contains the uterine arteries. Ligature these. Push a Playfair's probe with pure carbolic acid into the cervical canal, and then stitch the cervical stump antero-posteriorly with strong catgut, taking care to include the peritoneum in front as well as behind. Sponge out the pelvic cavity and close abdomen.

This is practically Baer's operation. Those who advocate pan-hysterectomy in all cases, say that the chief disadvantage of leaving the cervix is that it may necrose, but when the uterine arteries are tied in the way I have mentioned there is no fear of this, because the branches to the cervix are given off below the site of the ligature.

Sometimes I modify this operation by adopting Kelly's method of beginning the operation at one broad ligament from above downwards, and finishing it at the other from below upwards. This is of special value in cases of intraligamentous fibro-myoma, and cases in which the appendages on one side are difficult to get at on account of adhesions.

So-called pan-hysterectomy is indicated especially in cases of cervical fibro-myomata which cannot be enucleated or which are associated with tumours of the corpus uteri, and in cases of fibro-myoma complicated with malignant disease. It can be performed by the vagina, by the abdomen, or by the combined method. When the uterus is no larger than a four months' gravid uterus, I prefer the vaginal method, with or without morcellement or hemisection of the uterus, according to the case; but when the uterus is larger than this, or there are many adhesions, the combined method is much simpler and safer.

In conclusion, I wish to emphasise the following points:—

1. If the tumour be growing steadily larger, remove it whether the symptoms be slight or severe.
2. If the tumour be stationary as regards size, the treatment will depend on the severity and continuance of the symptoms, the age of the patient, and the state of her health.
3. If drugs fail to check hæmorrhage, a trial may be made of the Apostoli treatment, or preferably, of curettage of the endometrium, provided the case is not one for more radical measures.
4. Where removal of the tumour is indicated, remember the danger of delay. The weaker the patient and the more complicated the case, the higher the mortality after operation.
5. Unless in certain cases, supravaginal amputation of the uterus is preferable to pan-hysterectomy.
6. When hysterectomy is being performed, one or both ovaries, if healthy, should be preserved.
7. Abdominal enucleation of fibro-myomata, if performed at all, should be limited to cases of the sub-peritoneal variety, and then only when there are no more than two or three tumours present.
8. If the operation of pan-hysterectomy be adopted, perform it by the vagina when the uterus is small; by the combined method when it is large.

SOME STATISTICS BEARING ON THE INCREASING PREVALENCE AND MORTALITY OF PNEUMONIA.

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IN view of the great reduction which has taken place in the death-rate from phthisis pulmonalis, it is important to consider whether any corresponding decrease has taken place in the death-rate from other diseases in which the respiratory organs are specially involved, and, in particular, from pneumonia. Unfortunately there is too good reason to believe that the answer to this question is something worse than a mere negative. Table I shows that in Scotland the death-rate from pneumonia was increasing during most of the last half century, though it showed a tendency to abate just at the close of the century. Thus, the deaths, both among males and among females of the general population, were more than twice as numerous in 1891 as in 1861. Table II shows that the death-rate from pneumonia in England was, during great part of last half century, higher than that of Scotland for both males and females. The increase has not been very marked in the case of England, except for a time ten years ago, no doubt in connection with the prevailing influenza.

TABLE I.—PROPORTION OF DEATHS FROM PNEUMONIA AND PHTHISIS IN SCOTLAND IN EVERY 100,000 LIVING PERSONS OF THE POPULATION.

YEAR.	PNEUMONIA.			PHTHISIS.		
	Male and Female.	Male.	Female.	Male and Female.	Male.	Female.
1855, . .	76	93	62	261	263	258
1861, . .	67	82	54	259	254	263
1871, . .	81	99	64	278	263	291
1881, . .	87	104	72	209	197	221
1891, . .	141	168	116	184	182	187
1898, . .	133	158	110	168	175	162

Tables I and II show the great diminution which has taken place in the phthisis death-rate in Scotland and in England.

Table I shows the marked increase in the proportion of persons dying from pneumonia, and a distinct diminution in the proportion of persons dying from phthisis in Scotland in the years specified.

TABLE II.—AVERAGE ANNUAL DEATH-RATE FROM PNEUMONIA AND PHTHISIS OF MALES AND FEMALES PER 100,000 LIVING MALES AND FEMALES RESPECTIVELY IN ENGLAND IN DIFFERENT PERIODS OF TEN YEARS.

	PNEUMONIA.		PHTHISIS.	
	Male.	Female.	Male.	Female.
1851-60, ...	...	...	258	277
1861-70, ...	126	92	246	248
1871-80, ...	119	82	220	202
1881-90, ...	127	86	185	160
1891, ...	179	116	178	142
1898, ...	132	94	151	113

Table II shows the steady diminution in the proportion of persons dying from phthisis in England from 1851 to 1890 inclusive (average for each decennial). The mortality from pneumonia, which is practically the same among males in the second and fourth decennials, is considerably less in the third. The mortality among females, while undergoing even greater diminution during the third period, also shows an increase in the fourth. The mortality among females has, however, on the whole distinctly diminished.

The question now arises—Is the increase in the number of deaths due to an increased number of cases, or to an increased case mortality, or to both? The Reports of the Registrars-General do not supply the needed information, and we may therefore turn to the figures available in the Annual Reports of the Glasgow Royal Infirmary. Table III shows that in the successive decades of the period under consideration, the case mortality has steadily increased. In the case of females only, there was a temporary remission in the rate for the decade 1881-90. Table IV shows that a small proportion of the increased death-rate among the population is probably due to an increased number of cases. Thus, in the last decade, when the case mortality was high, there was also an increase in the admissions, but such a relationship is far from constant. It is noteworthy that Professor Osler speaks of pneumonia as having in the past ten years gradually replaced consumption as the principal cause of death in Chicago, and he says there has been a marked increase of the disease in Baltimore.

TABLE III.—AVERAGE CASE MORTALITY OF PNEUMONIA IN GLASGOW ROYAL INFIRMARY.

Period.	Male and Female.	Male.	Female.
1851-60, ...	18·07 per cent.	*	*
1852-60, ...	18·84 ,,	18·96 per cent.	18·27 per cent.
1861-70, ...	19·9 ,,	20·17 ,,	18·75 ,,
1871-80, ...	20·6 ,,	20·81 ,,	20·09 ,,
1881-90, ...	22·4 ,,	20·86 ,,	18·90 ,,
1891-1900, . . .	30·9 ,,	32·62 ,,	23·67 ,,

* Male and female cases not separated in 1851.

From Tables V and VI it is seen that during the fifty years, 1851-1900 (inclusive), the total number of cases of pneumonia treated in the medical wards of the Glasgow Royal Infirmary was 4,846 (4,198 cases classified as "pneumonia," and 648 classified as "pleuro-pneumonia"). Of these, 1,124 died, giving an average case mortality among males and females together for the whole period of 23·2 per cent.

In the statistics for 1851, the male and female cases are not separated, but this is done in each of the subsequent years.

TABLE IV.—PROPORTION OF ADMISSIONS OF PNEUMONIA TO TOTAL MEDICAL ADMISSIONS.

PERIOD.	MALE AND FEMALE.	MALE.	FEMALE.
1851-60, ...	4·94 per cent.	*	*
1852-60, ...	4·76 ,,	5·92 per cent.	2·51 per cent.
1861-70, ...	4·59 ,,	5·36 ,,	1·89 ,,
1871-80, ...	4·91 ,,	6·19 ,,	2·49 ,,
1881-90, ...	4·20 ,,	5·11 ,,	2·42 ,,
1891-1900, . . .	5·54 ,,	7·44 ,,	2·60 ,,

* Male and female cases of pneumonia not separated in statistics for 1851.

From Tables V and VI it may also be seen that the total number of cases of pneumonia treated in the medical wards of the Glasgow Royal Infirmary during the forty-nine years, 1852-1900 (inclusive), was 4,774. Of these, 4,138 were classified as "pneumonia," and 636 as "pleuro-pneumonia." Out of the 4,774 cases, 1,115 died—viz., 938 males and 177 females—giving an average mortality for males and females together of 23·3 per cent; for males alone, 24·03 per cent; and for females alone, 20·3 per cent.

TABLE V.—TOTAL NUMBER OF CASES OF PNEUMONIA TREATED IN MEDICAL WARDS OF GLASGOW ROYAL INFIRMARY DURING THE PERIOD 1851-1900, WITH TOTAL DEATHS AND AVERAGE CASE MORTALITY.

PERIOD.	TOTAL NUMBER OF CASES.			TOTAL NUMBER OF DEATHS.			AVERAGE CASE MORTALITY FOR WHOLE PERIOD.		
	Male and Female.	Male.	Female.	Male and Female.	Male.	Female.	Male and Female.	Male.	Female.
1851-1900, .	4,846*	‡	‡	1,124	‡	‡	23·2%	‡	‡
1852-1900, .	4,774†	3,903	871	1,115	938	177	23·3%	24·03%	20·3%

* 4,846 include—"pneumonia," 4,198; "pleuro pneumonia." 648.
† 4,774 include—"pneumonia," 4,138; "pleuro-pneumonia," 636.
‡ In the statistics for 1851 male and female cases are not given separately.

TABLE VI.—STATISTICS OF CASES OF PNEUMONIA TREATED IN GLASGOW ROYAL INFIRMARY DURING HALF A CENTURY.

YEAR.	GRAND TOTAL OF CASES TREATED IN MEDICAL WARDS.			TOTAL NUMBER OF CASES OF PNEUMONIA TREATED IN MEDICAL WARDS.			DEATHS FROM PNEUMONIA.			MORTALITY OF PNEUMONIA.			PROPORTION OF DEATHS FROM PNEUMONIA TO TOTAL DEATHS IN MEDICAL WARDS (APPROXIMATELY).		
	Male and Female.	Male.	Female.	Male and Female.	Male.	Female.	Male and Female.	Male.	Female.	Male and Female.	Male.	Female.	Male and Female.	Male.	Female.
										Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1851, . .	1,070	715	355	72	...	...	9	...	...	12·5	...	...	6·6	...	...
1852, . .	958	630	328	50	35	15	12	10	2	24·0	28·6	13·3	9·4	11·1	5·2
1853, . .	1,038	687	351	44	33	11	15	13	2	33·3	40 0	18·1	9·8	11·6	4·8
1854, . .	1,111	736	375	37	33	4	7	7	0	18·8	21·2	0·0	4·6	6·4	0·0
1855, . .	1,153	762	391	59	47	12	9	6	3	15·4	12·8	25·0	5·7	5·5	6·4
1856, . .	1,137	784	353	63	55	8	13	11	2	20·8	20·0	25·0	9·09	11·1	4·4
1857, . .	1,362	928	434	50	43	7	9	8	1	18·1	18·8	14·3	6·1	8·6	1·8
1858, . .	1,317	875	442	68	60	8	13	10	3	19·1	16·6	37·5	8·5	10·0	5·6
1859, . .	1,299	864	435	73	68	5	6	6	0	8·3	8·8	0·0	4·2	5·9	0·0
1860, . .	1,527	943	584	76	53	23	14	10	4	18·5	18·8	17·5	9·4	10·4	7·5
1861, . .	1,863	1,136	727	49	40	9	7	5	2	14·3	12·5	22·2	3·8	4·5	2·8
1862, . .	2,150	1,348	802	66	56	10	12	11	1	18·1	19·6	10·0	6·0	9·0	1·2
1863, . .	1,988	1,215	773	69	48	21	14	10	4	20·4	20·8	19·0	5·9	6·7	4·4
1864, . .	1,769	1,042	727	60	36	24	26	14	12	43·3	38·8	50·0	11·3	10·2	12·9
1865, . .	1,697	1,058	639	60	47	13	9	8	1	15·1	17·2	7·7	4·3	6·1	1·3
1866, . .	2,140	1,344	796	94	80	14	20	17	3	21·2	21·2	21·5	7·3	9·0	3·5
1867, . .	2,117	1,321	796	62	54	8	11	10	1	17·7	18·5	12·5	4·1	6·2	0·95
1868, . .	2,234	1,431	803	88	72	16	15	14	1	17·2	19·6	6·2	5·7	7·7	1·2

1869, . .	2,222	1,415	807	167	151	16	31	30	1	18·5	20·0	6·2	16·1	22·2	1·7
1870, . .	1,971	1,244	727	103	90	13	18	17	1	17·4	18·8	7·7	7·3	9·8	1·4
1871, . .	2,236	1,396	860	116	85	31	32	29	3	27·7	34·4	9·7	10·6	15·1	2·8
1872, . .	2,219	1,424	795	97	86	11	22	20	2	22·7	23·2	18·1	6·5	9·1	1·6
1873, . .	2,274	1,487	787	113	91	22	22	18	4	19·6	20·0	18·1	6·4	7·7	4·0
1874, . .	2,403	1,551	852	134	112	22	23	20	3	17·2	17·8	13·7	6·9	8·7	2·8
1875, . .	2,719	1,774	945	133	117	16	32	31	1	25·0	27·0	6·2	8·0	12·5	0·6
1876, . .	2,515	1,663	852	144	117	27	29	23	6	20·0	19·6	22·2	8·5	9·7	5·8
1877, . .	2,424	1,626	798	161	141	20	27	23	4	16·7	16·3	20·0	9·0	10·9	4·4
1878, . .	2,453	1,660	793	89	72	17	16	11	5	17·9	15·2	29·4	5·01	5·1	4·6
1879, . .	2,582	1,701	881	100	76	24	27	16	11	27·0	21·0	45·0	8·5	8·0	9·0
1880, . .	2,329	1,531	798	102	83	19	16	13	3	15·6	15·6	15·7	5·3	6·1	2·9
1881, . .	2,397	1,522	875	101	85	16	25	18	7	24·7	21·1	43·7	9·3	10·05	7·9
1882, . .	2,614	1,661	953	140	113	27	26	24	2	18·5	21·2	7·4	9·9	13·4	2·4
1883, . .	2,549	1,622	927	139	110	29	27	22	5	19·4	20·0	17·2	9·5	12·2	4·8
1884, . .	2,423	1,563	860	138	116	22	29	25	4	21·0	21·5	18·1	10·4	13·0	4·6
1885, . .	2,161	1,419	742	128	98	30	32	27	5	25·0	27·5	16·6	12·2	14·2	6·9
1886, . .	2,069	1,349	720	9	9	0	4	4	0	44·4	44·4	0·0	1·5	2·3	0·0
1887, . .	1,897	1,172	725	95	75	20	25	23	2	26·3	30·6	10·0	11·2	16·2	2·5
1888, . .	2,044	1,267	777	108	91	17	23	20	3	21·0	22·0	17·0	10·3	13·6	3·9
1889, . .	2,149	1,328	821	70	50	20	18	11	7	25·7	22·0	35·0	6·5	6·5	6·6
1890, . .	2,183	1,310	873	102	82	20	22	19	3	21·5	23·1	15·0	8·9	11·8	3·5
1891, . .	2,100	1,300	800	136	119	17	46	40	6	33·8	33·6	35·3	17·4	21·0	8·1
1892, . .	2,052	1,243	809	100	78	22	29	21	8	29·0	26·9	36·3	10·3	11·6	8·0
1893, . .	2,024	1,264	760	114	91	23	36	31	5	31·5	34·0	21·7	12·1	15·5	5·2
1894, . .	2,129	1,293	836	99	73	26	27	24	3	27·2	32·9	11·5	9·4	12·2	3·3
1895, . .	2,215	1,345	870	109	86	23	33	30	3	30·2	34·8	13·0	11·8	15·3	3·5
1896, . .	2,133	1,322	811	107	84	23	35	27	8	32·7	32·1	34·8	12·5	14·5	8·6
1897, . .	2,300	1,414	886	119	98	21	38	34	4	31·9	34·6	19·0	11·3	15·6	3·4
1898, . .	2,434	1,428	1,006	119	99	20	39	34	5	32·7	34·3	25·0	12·6	18·1	4·1
1899, . .	2,354	1,427	927	143	119	24	48	42	6	33·5	35·4	25·0	13·6	17·2	5·6
1900, . .	2,198	1,298	900	171	146	25	46	41	5	26·9	28·0	20·0	13·6	19·0	4·0

During the forty-nine years 1852-1900 (inclusive), the mortality among males has varied in the different years from 8·8 per cent to 44·4 per cent, while that among females has ranged from 0 per cent (on three occasions, viz., in 1854, when there were 4 cases with no deaths; in 1859, when there were 5 cases without a death; and in 1886, when no female cases were admitted) to 50 per cent, the latter being recorded in 1864, when, out of 24 female cases admitted, 12 died. The mortality for males in 1864 was high also, viz., 38·8 per cent, 14 having died out of 36.

In thirty-three of the forty-nine years, the case mortality was higher among males than among females; in the remaining sixteen years the case mortality was greater for females.

In all those years the male cases were much more numerous than the female, the difference being least in 1864, when there were 36 male and 24 female cases.

The case mortality appears to vary from year to year in a quite irregular way, and there does not seem to be any constant relation between the case mortality and the number of cases of pneumonia admitted—*e.g.*, in some years (comparing them with those immediately preceding and succeeding) there is a high mortality with few cases, while in others there is a low mortality with few cases, and the opposite of both these conditions also occurs (see Table VI).

The only constant feature is the gradual upward tendency of the average case mortality (see Table III).

If the fifty years be divided into groups of ten (Table III), the average case mortality for males and females together is found to be constantly increasing, having risen from 18·07 per cent in the period 1851-60 to 30·9 per cent in the period 1891-1900, a sudden increase 8·5 per cent occurring in the last decade.

Taking the male and female cases separately in similar periods, the average case mortality among males is seen to have increased from 18·96 per cent in the period 1852-60 to 32·62 per cent in the period 1891-1900. By far the greater part of this increase occurred in the last decade, when the average case mortality for males became greater by nearly 12 per cent. Among the females there was a slight steady increase in the first three decades, a slight downward movement in the fourth, and an increase of about 5 per cent in the last decade (1891-1900).

Table IV shows that, compared with all other cases treated in the medical wards, pneumonia has become slightly more frequent. The proportion of cases of pneumonia to all medical cases was 4·94 per cent in the period 1851-60, and fluctuated between that and 4·20 per cent up till 1890. In the last decade, however (viz., 1891-1900), this proportion increased to 5·54 per cent. This table also deals separately with the proportion of male cases of pneumonia to all male cases admitted to the medical wards, and, in the same way, with female cases. It shows that among males pneumonia has become a more common disease in this hospital. Thus, though there are distinct fluctuations up to 1890, the percentage for the decade 1891-1900 is greater by 1·25 than the previous record of 1871-80, and greater by 1·52 than the percentage in the period 1852-60. Among females this increase in the relative frequency of pneumonia is practically absent, the percentage being greater in the fifth period than in the first by only 0·09.

From the foregoing it would appear that (1) on the whole pneumonia is becoming a slightly more frequent disease in the Glasgow Royal Infirmary when compared with all other medical diseases admitted, and (2) that the average percentage mortality shows a marked increase, amounting to 66 per cent for males and females together; 72 per cent for males alone, and 29·5 per cent for females alone.

CASE OF OBTURATOR HERNIA OF THE OVARY.

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The following case of a right obturator hernia of the ovary was observed in a dissecting-room subject, aged 87, who died of general debility following hemiplegia. The hernial condition was not recognised during life, consequently there was no clinical history relating to the case. The difficulty of diagnosis, had the condition been suspected, would have been exaggerated by the presence of the hemiplegic condition on the right side, any guiding symptoms referring to pressure on the obturator nerve being masked thereby.

Obturator hernia of the ovary appears to be of extremely rare occurrence. In an analysis of twenty-five cases of obturator hernia recorded in Holmes and Hulke's *System of Surgery,*[1] mention is made of one case in which the Fallopian tube and ovary formed the contents of the sac, but this, so far, is the only case I have been able to find in the literature of the subject. Under the consideration of ovarian hernia, most of the text-books of gynæcology mention the obturator form as a possible occurrence, but give no reference to any actual case. Roguer Gusenthal[1] describes a case of obturator hernia of the intestine where the ovary and tube descended into the hernia sac, and he has noted three other cases of a similar nature described by other observers. In their paper on "Hernia Obturatrice," Picqué and Poirier[2] figure and describe a case of this form of hernia, in which the Fallopian tube had descended with the intestine into the sac. In the present case, however, there was no suspicion that the bowel had, at any time, either taken part in inducing the protrusion of the hernial sac or formed part of its contents. The following are the details of the case:—

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[1] Holmes and Hulke, *A System of Surgery*, 1883, vol. ii.

The hernial sac contained the whole ovary (measuring 3·7 cm. by 1·6 cm.), 1 cm. of the round ovarian ligament, and about 4·8 cm. of the Fallopian tube. These were not in any part adherent to the sac, and could be pulled out with great ease. The mouth of the sac was circular, its diameter being 1·4 cm., and the peritoneum lining it was thrown into a series of small redundant folds. The sac itself was flask shaped, its greatest depth being 5·4 cm., its greatest transverse measurement 2·8 cm. It extended inferiorly to the upper border of the adductor magnus, and internally to the spine of the pubis. The strong aponeurosis underlying the pectineus bound down the sac anteriorly. The outer border of the pectineus muscle had been stretched by the pressure of the hernia, and its muscular bundles were separated by strands of fascia containing fat. Posteriorly, the sac lay on the obturator externus muscle, the thick upper border of which lay immediately below and behind the neck of the sac. The obturator nerve and vessels were found in their usual relations to one another at the external aspect of the neck of the sac. The nerve, at its entrance into the foramen, gave off the branch to the obturator externus, which passed behind the neck of the sac to enter the upper border of the muscle. After its exit from the foramen, the main nerve also turned inwards behind the sac and divided higher than usual, its muscular branches emerging from under the sac. The branch to the adductor gracilis was the innermost; the branches to the adductor brevis, adductor longus and pectineus, lying practically in the same plane, appeared in order from within outwards. On a slightly deeper plane, and to the outer side of the twig to the adductor brevis, was the branch to the adductor magnus. Neither the obturator nerve, nor any of its branches, was adherent to the hernial sac. The sac seemed, in this case, to have been pushed out in front of the obturator nerve, escaping altogether any such resistance to its passage from the nerve or its branches, as was reported in one case by Vinson.[1]

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[1] Roguer Gusenthal, *Wiener Med. Presse*, June, 1893, No. 26.

[2] Picqué and Poirier, *Revue de Chirurgie*, 1892, xii.

The obturator artery gave off its pubic branch within the pelvis, about 1 cm. from the foramen. This branch, which was of small size, passed inwards under the foramen to reach the posterior aspect of the body of the pubis. After passing through the foramen, the obturator artery divided on the border of the thyroid membrane into its external and internal branches.

The neck of the sac lay to the inner side of the obliterated hypogastric artery. On the inner boundary of the mouth of the sac was the side of the bladder, which, in this subject, was enlarged and extended in the collapsed state up to the edge of the obturator ring. This extension was also noted on the opposite side, and was, therefore, not the result of traction of the hernia. The wall of the hernial sac consisted of two distinct layers—a layer of peritoneum within, and a layer of pelvic fascia without. Between these two layers was a considerable amount of fat, the fat of the subperitoneal tissue, which reached its maximum at the bottom of the sac, forming there a well-defined pad of fat about 1 cm. in diameter.

There were a few associated pathological conditions in the case which are worthy of notice. The ovary, which was lodged in the hernial sac, had a very smooth covering, on which no scars were visible. It contained numerous small cysts, a condition which existed also in the left ovary. Adhesive bands bound down the left ovary, and a well-marked adventitious band was found, stretching from the uterus to the rectum, across the pouch of Douglas. The round ovarian ligament of the right side was much longer than that of the left, the measurements being—right, 8·5 cm., and left, 1 cm. The right Fallopian tube was correspondingly elongated. The body of the uterus had been deflected to the right side, the cervix lying over to the left.

As remote pathological conditions may be mentioned (1) a constriction of the vagina, 3·7 cm. from the orifice, associated with (2) an adhesive obliteration of the external os; and (3) a distinct small hernial sac in the left crural canal.

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[1] Vinson, *Th. Paris*, 1844, No. 240.

1. Apart from the rarity of this form of obturator hernia, the chief interest in this case is to be found in the arrangement of the fascia forming the sac of the hernia. As quoted by Fredet,[1] Picqué and Poirier, and following them Berger, have described the sac of an obturator hernia as formed merely of peritoneum. According to these writers, the obturator ring is uncovered by fascia, the pelvic fascia recognised by them stopping short, when followed upwards from the surface of the obturator internus muscle, in a distinct thickened band which forms the lower boundary of the foramen, a view which has been adopted in recent text-books.[2] I have examined several normal pelves with a view to this point, and find that there does exist a layer of fascia over the foramen, a layer which is quite distinctly defined, although much thinner than the thickened rim with which it is continuous at the lower margin of the ring. This thin layer is pierced by the obturator vessels and nerves, which receive an investment from it as they pass through the foramen.

Most of the other observers who have described cases of obturator hernia have recognised a distinct fascia forming the outer wall of the sac, but have differed somewhat in their interpretation of the nature of this fascia. Labbé,[3] for instance, describes it as *fascia iliaca* and *fascia pelvien*, while much more recently Targett[4] has distinguished it as *obturator* fascia. These differences are, however, probably differences merely in the nomenclature. In the present case, I have adopted the nomenclature of Cleland and Mackay,[5] and have described as pelvic fascia, that layer of fascia which is bound down to the iliopectineal line, and is continuous above and externally with the iliac fascia and inferiorly with the recto-vesical fascia. During the formation of the hernia, the fine layer of this fascia, which originally covered the ring, has undergone considerable thickening, and has been carried forward as a well marked fascial pouch, separated loosely from the peritoneal sac by a quantity of fat. This pouch can be very easily stripped off from the peritoneum, and its continuity with the pelvic fascia demonstrated.

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[1] Fredet, *Revue de Chirurgie*, 1901, xxiii.

[2] Testut, *Traité d'Anatomie Humaine*, 1897; Poirier, *Traité d'Anatomie Humaine*, 1896; *Quain's Anatomy*, 1892, vol. ii, part 2.

[3] Labbé, *Bull. Soc. Imp. de Chir.*, Paris, 1866.

[4] Targett, case reported by Sinigar, *British Medical Journal*, 6th March, 1897.

[5] Cleland and Mackay, *Anatomy, General and Descriptive*, 1896.

Fredet[1] has not been able to find this layer of pelvic fascia in his case, but has described as the outer covering of the sac a layer of what he has called *umbilico-vesical* fascia. This umbilico-vesical fascia is a layer of subperitoneal fascia which passes between the obliterated hypogastric arteries of the two sides across the front of the bladder, and extends up to the umbilicus. This fascia was present here, but as it was with difficulty separable from the peritoneum, I have included it with that sac, regarding it as a specially defined and strengthened subperitoneal tissue.

Fredet lays considerable stress on the presence of this covering of the hernia as a means of differentiating the congenital and acquired forms of obturator hernia from one another. He believes that the umbilico-vesical fascia is formed by the approximation and fusion of two adjacent layers of peritoneum continuous with a mesocyst which is present in the fœtus. Such a mesocyst I have found existing in fœtuses of about the fourth month, where it is in relation with the upper three-fourths or so of the bladder, but in later fœtal life it rapidly disappears. In the fœtus of the sixth month, it is represented merely by a fold of peritoneum which forms a small pouch projecting inwards for a short distance in front of the hypogastric artery—the anterior surface of the bladder being practically free of peritoneum. At the seventh month, all trace of the mesocyst has entirely disappeared. Even if this umbilico-vesical fascia, which in the present case was, as already noted, closely adherent to the peritoneum—a condition which is probably the normal one—be recognised as a distinct covering of the hernia, yet its presence could only serve to demonstrate that the hernia had been formed after the sixth month of intra-uterine life.

2. The great enlargement of the bladder may be considered as one of the factors which determined an ovarian rather than an intestinal hernia in this case. As noted above, the bladder wall, in the collapsed state, reached the margin of the foramen, while in distension the bladder covered the ring to a very considerable extent. It seems probable that, in this way, it protected in some measure the upper and inner parts of the foramen from the direct pressure of the intestine, while, at the same time, it left open the outer and inferior portion through which the ovary had been pushed.

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[1] Fredet, *loc. cit.*

3. So far as could be judged from the anatomical appearances, the hernia had never carried before it the obturator nerve or any of its branches. The very great elongation of the round ligament of the ovary pointed to the fact that the hernia was probably of long standing, and the smooth condition of the ovarian covering, indicating some interference with ovulation, taken in conjunction with the size of the ovary, would lead one to suppose—although the evidence is by no means conclusive—that the protrusion of the hernia had taken place in early adult life.

In the case already referred to, reported by Vinson, the hernia was arrested by the obturator nerve, which formed a flattened constricting band stretched over the sac. Reasoning from this case, Fredet has argued that the pain and paralysis produced in the region of distribution of the obturator nerve (Romberg's sign) is due to some such condition. He supposes that in the early stages, when Romberg's sign is most evident, the hernia is temporarily arrested by the obturator nerve or some of its branches, and that as the hernial sac increases in size, it manages to throw off this constricting band, and the urgent pressure symptoms disappear.

In the present case, the appearances seem to point to the fact that the hernia has been protruded in front of the nerve and its branches, and has not been constricted in this manner. It must, of course, be remembered that the hernia here was ovarian; but any pain in the obturator region would, in this case, have been due to the steady pressure of the hernia, and would naturally be greater at the commencement of the hernial formation, when the bulk of the ovary was being forced through the ring. In addition, it seems reasonable to suppose that the pain would be liable to exacerbations at each menstrual period from the engorgement of the ovary.

CURRENT TOPICS.

Gunning Celtic Prizes of the Caledonian Medical Society.—Principal Rhys (Oxford) and Professor Mackinnon (Edinburgh), the adjudicators, have awarded the first prize of £20 to Dr. H. Cameron Gillies, London, for his paper on "A Gaelic Medical Manuscript of 1563," and the second prize of £10 to Mrs. K. W. Grant, New Zealand, for a paper on "The Influence of Scenery and Climate on the Poetry and Music of the Highlands." The papers will be published in the *Caledonian Medical Journal* for April and July, 1902.

COMPLIMENTARY DINNER TO DR. DONALD MACLEOD, J.P., KILMARNOCK.

On the evening of the 31st January, in Mr. Norman Adam's Restaurant, Kilmarnock, Dr. Donald Macleod was entertained at dinner by the members of the Kilmarnock Medical Society and other medical friends, on the occasion of his retiral from active general practice. Dr. Wylie, president of the Society, occupied the chair, and Dr. John Robertson, vice-president, officiated as croupier. There were also present—Drs. Frew, Rankin, M'Alister, R. C. Robertson, J. Lawrie, D. C. Macdonald, Moir, Aitken, Prentice, and Lipscomb, all of Kilmarnock; Parry, Glasgow; Wilson, Irvine; and W. A. Macleod, London.

The loyal toasts were given from the chair and heartily honoured.

DR. M'ALISTER, in proposing "Our Guest," said—I have the honour and pleasure of asking you to respond to the toast of the evening, "Our Guest, Dr. Macleod," on the occasion of his retiral from active general practice, and on account of his position as father of the medical profession here. Although Dr. Macleod has passed the allotted three score years and ten, and has spent over half a century in the arduous and wearing-out practice of medicine, we happily do not require to regard him as full of years and infirmities. On the contrary we rejoice to see that his mind retains all its wonted activity, and his step its youthful lightness. A compliment that greets the medical profession as early as the rise of Greek literature seems to me to be peculiarly applicable to our guest, and to denote how he should be regarded by us on an occasion such as the present. That compliment is—"One man practised in medicine verily outweigheth many other men," and it is of a man practised in medicine who verily outweigheth many other men I wish to speak to-night. Dr. Macleod has had a very varied experience in medicine. His first responsibilities began with the last epidemic of cholera, and we can well understand the trials and anxieties of a young medico suddenly set to deal with such a scourge as cholera while his theories were yet in a chaotic state and his experience to seek. After this first and special effort he began the general practice of medicine in Kilmarnock and its neighbourhood, and I do not believe any man has had a more extensive experience of the various branches of practice than Dr. Macleod. In mining, friendly society, parochial, and family practice he has done much successful work, and as each kind of practice has its own peculiar requirements of thought and action, he has emerged from the discipline of over fifty years, and a hard and exacting discipline it is, with a well trained and well balanced mind, and a marvellous store of facts and observations. Without doubt, too, he must have found, like all other medical men, that his youthful enthusiasm in time received a check from his own limitations, and a counter check from the ignorance or prejudice of selfish patients, and that he passed through varying and dangerous stages of disgust and cynicism to pity and a broad toleration for humanity. It is, however, in hospital practice we must look for Dr. Macleod's chief delight and best achievement. He has the surgical instinct, not granted to all men who practice medicine, and has had the almost unique experience among us of having lived and worked in the three periods of surgery which I perhaps may be allowed to term the septic, the antiseptic, and the aseptic. The mere mention of these terms will convey to you the vast revolution in thought and practice Dr. Macleod has been a witness of and worker in. The younger men of to-day, with settled rules of aseptic procedure, have no understanding of the mental difficulty of passing from the septic to the antiseptic idea and logically to the simpler and more desirable preventive or aseptic idea. Dr. Macleod may well be proud that he has lived through such a time, and has been able to bend his mind to such radical changes in the conceptions of surgery. There remains one other kind of practice now attained by our guest, and evidenced by the presence of his professional friends, that of a consultant, of a man practised in medicine, whose advice and help are valued by those best qualified to judge. A life and experience such as I have indicated produce a greatly increased power of observation and a cautious avoidance of hasty generalisations. A species of second sight where disease is concerned may almost be said to be acquired. There is also a distinctly humanising influence in the constant contact with suffering, and in recognition of this it has been well and finely said, "Where there is love of humanity there will be love of the profession." When we come to consider Dr. Macleod's present day personal characteristics we find his original endowments and later acquirements have combined to make an admirable character in medicine. He appears to us a man of alert and eager mind who has seen much, observed keenly, imagined boldly, and doubted often. The maxim of the ancient philosophic playwright of Syracuse would appeal to Dr. Macleod—

> " A sober sense of honest doubt
> Keeps human reason hale and stout."

As a medical man, we observe he has always had a peculiar shrewdness in diagnosis, and a bold and ready application of his knowledge in practice. His memory, astonishingly accurate for long past experiences, enables him to recall his cases and give the lessons they taught him in a most striking way. He has been all his life an omnivorous reader of textbooks and journals, and so has kept his modernity of spirit. I am afraid a week end without his *Lancet* or *Practitioner* would be a terrible trial to Dr. Macleod. There are many other features of character of which it is not my purpose to speak. Dr. Macleod's family affections, his business aptitudes, and his social qualities, must be dealt with by some other. I must not omit to say, however, that his religious profession has always seemed to me to be what we his fellows in the profession of medicine should commend. The old saying so often levelled against our profession, " *Ubi tres medici, ibi duo athei*," has a refutation in such a man as Dr. Macleod, who is not *atheus* but—an elder of the Kirk. We may now recall the aphorism of the great Father of Medicine himself, " Life is short, and the Art long; the occasion fleeting, experience fallacious, and judgment difficult." And we would say to Dr. Macleod in pharaphrase of it—In the evening of your days, which we trust will be prolonged, we recognise that you have striven through life to advance your art, to seize the fleeting occasion, to divest fallacious experience of its fallacies, and to render judgment, difficult as it is, helpful to your fellows, and we honour you for it.

DR. MACLEOD, in replying, said—To thank you, my professional friends, for the honour you have done me in gathering together on this occasion—what I may call the end of my professional career—adequately and suitably, is beyond my power. But, with the knowledge that I am placed at the bar of my friends and sympathisers, I take courage; and I ask you all to accept my heartfelt thanks for the right goodwill and kindly feeling with which you have proposed and drunk my health. When one is suddenly brought to a full stop on the road of life at my age, as I am to-night, one naturally turns to review the steps that have led him hither, and to compare the past with the present. It is not my intention to detain you long in narrating the various changes that have taken place, and discoveries that have been made in the practice of medicine and surgery in the past fifty years. You are as well versed in that subject as I am. My theme must refer rather to personal incidents than to subjects of a more professional nature. During the late forties and early fifties, one of the most remarkable and beneficent discoveries of modern times took place. I refer to the introduction of chloroform and ether, which has resulted in relieving human suffering to an untold extent. Having myself seen operations performed in the pre-anæsthetic period, I can testify to the agonising suffering endured by patients. Perhaps the words of a distinguished medical man, who underwent amputation of a limb without chloroform, will speak for themselves:—"Suffering so great as I underwent cannot be expressed in words, and thus fortunately cannot be recalled. The particular pangs are now forgotten, but the black whirlwind of emotion, the horror of great darkness, and the sense of desertion by God and man, bordering close on despair, which swept through my mind and overwhelmed my heart, I can never forget, however gladly I would do so. Only the wish to save others some of my suffering makes me deliberately recall the anguish and humiliation of such an experience; nor can I find language more sober or familiar than that I have used to express feelings which, happily for us, are too rare as matters of general experience to have been shaped into household words." Marvellous as it may appear to us nowadays, the introduction of anæsthetics was hotly opposed, not only by many medical men, but by many of the clergy, who condemned the use of chloroform as "an impious interference with the designs of the Creator." The practice of blood-letting was in those days made use of in the treatment of almost every disease, and even as a prophylactic measure. I can remember having patients coming from every quarter twice a year—generally at the "fall," and again in the spring—to be bled, without any necessity for it, except what occurred from the force of habit. Van Helmont declared at this time that "a bloody Moloch sat in the chairs of medicine," and there seems to be little doubt that the practice of those days was excessive, but if we bled too much then, we certainly bleed too little now. All along the line in surgery and medicine advances have taken place, till to-day the opening of an abdomen gives us hardly greater concern than the amputation of a finger did then. One of the most interesting facts connected with the history of

Kilmarnock is the vast improvement that has taken place in the material condition of the people—house accommodation especially being very much bettered. At the time I began practice, the most populous parts of the town were Fore Street, High Street, Robertson Place, and Low Glencairn Street, almost the entire population (21,000) being cooped up in those four streets, which at that time presented very much the appearance they do now. In consequence of this the infectious class of fevers—*e.g.*, typhoid, typhus, small-pox, scarlet, measles, diphtheria, &c.—were rife and extremely deadly. It was not uncommon for three or four of a juvenile family to be swept away in a few weeks by scarlet fever. Typhoid was endemic in the town, and it was the frequent occurrence of it in epidemic form, giving rise to a high rate of mortality, that ultimately led philanthropic minds to procure hospital accommodation. One name in particular might be mentioned in connection with the founding of the hospital—that of the late Archibald Finnie, of Springhill. The hospital was erected in 1868. Few people now living know how much they owe to the philanthropy and public spirit of those who have been the means of establishing an institution the advantages of which are now so fully enjoyed. One of the most remarkable features in connection with the history of the infirmary is the change in the public desire for admission to its benefits; the fact being, that thirty years ago the public had to be in a manner decoyed within its doors. It is now evident that the demands on its resources are daily becoming more pressing, and that soon an extension of its premises will be required. Before concluding my remarks it might be interesting to you to compare the material condition of the profession in Kilmarnock, as it existed then, with what it is now. Fifty years ago, there were ten medical men in the town, and strange to relate, there were about double that number to a smaller population fifty years before. These medical men mostly lived in flats—usually top-flats—no one enjoying the luxury of a "front door." Visiting was mainly done on horseback. My visitations at that time extended from the town to Dreghorn and round by Fergushill, returning by Girgenti and Kilmaurs—traversing these routes perhaps three times a week, though this only continued for a comparatively short period. Fees were small, and very often left unpaid; and when the doctor's services were rewarded, it was often in kind. For instance, in visiting a medical friend in Ayr, I well remember the condition of his consulting-room, where there were huddled together fowls, ducks, and even a young pig, and vegetables innumerable. The reply to the question where all this live stock came from was that it was given in payment of fees, which was not an uncommon custom in those days. But I must not detain you longer; your patience must be exhausted. I would only add that our profession can show more hard work done for its own sake than any other. This I can say of myself, while I have wrought at my profession with no singular ability, yet I have loved it with all my heart. I might even venture to say that I have done the work for the work's sake and not for its monetary reward, and this, gentlemen, I believe to be the key to success in all true work of every kind. He is a poor labourer who only toils for his hire. The primeval curse that he shall earn his bread by the sweat of his brow is upon him. This can only be removed by working for the love of the work and for the benefit it is to his fellow-men, and no occupation is better fitted to inspire enthusiasm than that to which I have the honour to belong. Besides earning an honourable livelihood, the medical man is rewarded by experiencing the truth of the words—

> "The quality of mercy is not strained,
> It droppeth as the gentle rain from heaven
> Upon the place beneath. It is twice blessed;
> It blesseth him that gives and him that takes."

How long I may still with shortening stride move about our streets and alleys only the Great Dispenser of all events can tell, but this, gentlemen, I do know, that till my last day my heart will have been lightened and my old age made less burdensome by your kindness of this evening.

The other toasts were "Mrs. Macleod," by DR. RANKIN, replied to by DR. W. A. MACLEOD; "The Visitors," by DR. FREW, responded to by DR. WILSON; "Kilmarnock Medical Club," by DR. PARRY, replied to by the PRESIDENT; "The Chairman," by DR. PRENTICE, and "The Croupier," by DR. MACDONALD.

NEW PREPARATIONS, &c.

SOLOID NITRO-PROPIOL, GR. ¼ (0·016 gm.) (London: Burroughs Wellcome & Co.), is a convenient form in which to carry and use the nitro-propiol test. This is a confirmatory test for the presence of sugar in the urine, when other tests, such as Fehling's, give a positive result. The nitro-propiol reaction is not influenced by such bodies as uric acid, creatinin, and glycuronic acid. The soloids are supplied in tubes containing twenty. To apply the test, one soloid is added to 10 minims of urine and 3 drachms of water, and the mixture is boiled. If glucose is present, the liquid becomes deep blue, owing to the production of indigo blue. The boiling should be continued for five minutes, if the reaction does not appear sooner.

TABLOID OPHTHALMIC (X) ATROPINE SULPHATE, GR. $\frac{1}{600}$ (0·00018 gm.) (London: Burroughs Wellcome & Co.), is a preparation which is not only easy to store, to carry about, and to use in practice, but is designed to avoid the difficulty due to the unstable character of solutions of the alkaloids, especially when they are in such feeble strength as is used in ophthalmic practice. The tabloids are issued in tubes containing twenty-five.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1901-1902.

MEETING V.—6TH DECEMBER, 1901.

The President, DR. W. G. DUN, *in the Chair.*

ADJOURNED DISCUSSION ON "PNEUMONIA: ITS TREATMENT AND ITS NATURE."

Dr. Macpherson said—Mr. President and gentlemen, before referring to the subject proper of this discussion—the treatment of pneumonia—I would like to make a few remarks regarding the mortality of the disease. At our last meeting, Dr. M'Vail and Dr. Lindsay Steven submitted statistics showing, in a large number of cases treated by them in hospital, a mortality ranging from some 26 to over 40 per cent. These figures are somewhat appalling, but I am certain that no one in general practice will feel convinced that they at all represent the true mortality of the disease. Although we do at times find it peculiarly fatal, I think I am safe in saying that the average mortality of pneumonia probably lies between 15 and 20 per cent. The reason of the higher mortality in hospital is obvious, it being mainly the more severe forms of the disease that are sent there. But I am strongly of opinion that this very sending of pneumonia cases to hospital has a not inconsiderable influence in raising the mortality rate. For, when we think of the great disturbance of the circulation and depression of the strength involved in getting out of bed, dressing, and removing, mayhap a distance of several miles and in severe weather, a pneumonia patient on the third, fourth, or even more advanced day of the disease, we cannot but acknowledge that such must have a most prejudicial effect upon the course of the disease, and may even in some cases precipitate a fatal issue. I think, therefore, it behoves us to be very careful in advising the removal of pneumonia cases to hospital, that it should only be done when there are very strong reasons against their treatment at home, and that when done, it should be very early in the disease. Whilst acknowledging that efficient nursing and feeding are the most important factors in the treatment of pneumonia, I think that there is, perhaps, no disease in which there is greater opportunity for the skilful guidance and intervention of the physician. In a disease tending so markedly and rapidly to asthenia and failure of the heart, the keynote of our treatment must be support and judicious stimulation. For many years, it has been my plan to treat nearly all my cases by a combination of carbonate of ammonia with tincture of digitalis, beginning with a small dose, such as 5 grains of the one and 5 minims of the other, every four hours, and increasing it gradually, as the pulse indicates, to 10 grains of the carbonate and 10 or even 15 minims of the tincture every four hours. The carbonate of ammonia is a valuable diffusible stimulant, and its action as a stimulant expectorant is frequently valuable in the stage of resolution. The digitalis slows the heart, by lengthening the cardiac diastole, and so rests the wearied cardiac muscle; but beyond this, it also aids in the direct nutrition of the heart, the blood supply from the coronary artery only reaching the heart during the period of diastole. I do not believe in the use of digitalis as a specific for pneumonia, as advocated by Petresco, in such doses as 120 grains of the leaf in infusion in twenty-four hours; nor do I believe in his mortality of 1·22 per cent, nor in the aborting of his cases on the second or third day. But, I think, by the judicious use of digitalis, we can frequently manage to keep our patient's pulse under 100, and that, I consider, is a great gain. I also employ stimulants in the form of brandy or whisky in most cases of pneumonia, beginning with such small quantities as 2 oz. in the twenty-four hours, and gradually increasing it to 4, 6, or 8 oz., according as the pulse indicates. In the lobular pneumonia of children under 5 years of age, with its rapid feeble pulse, the use of stimulants is of great value, if given in very small doses, and frequently repeated. My usual instruction is to mix a small teaspoonful with a quantity of milk, and spread it over a period of four or six hours. If you do not restrain the eagerness of relatives, especially amongst the lower classes, in the giving of stimulants, you will certainly find that the little patient is subject to disastrous dosing. To quote a case in point, I saw, with my assistant last week, a child 18 months old, who had been ill with severe gastro-enteritis for a week. The abdominal symptoms were checked, but the child lay in a semi-stupor, with a cool skin, a slow pulse, tending to irregularity, and there was a marked tache. I was about to give a grave prognosis, when I thought of asking the mother as to the stimulant the child was getting, and she answered that it was "getting a wee drap noos and thens." On further definition, this turned out to be a teaspoonful of brandy every hour or so. The stimulant was stopped, and in a day or two the child was perfectly well.

As regards local treatment, I have great faith in the efficacy of more or less continuous poulticing with linseed meal and mustard, trying to get a moderate rubefacient effect as soon as possible. Not only do I think that these applications have a soothing effect upon the pain, but I am convinced that they exercise a certain influence on the progress of the local condition.

With regard to blood-letting, I have used this powerful remedy in several other conditions, but I have never yet seen one case of pneumonia which I thought justified its use, or in which I regretted not having used it. One cannot but conclude that either the type of the patient or the type of the disease must have changed very much since the days of indiscriminate blood-letting.

Inhalations of oxygen I have not much experience of. It seems to me that they cannot exert any decided influence upon the disease, beyond tiding the patient over a period of dyspnœa and imperfect aëration of the blood. In the treatment of hyperpyrexia, I have no experience of the use of cold baths, nor of the application of ice. Such may be of great value in hospital practice, but I think we cannot look to their introduction into private practice to any extent. In most cases I rely upon frequent cold sponging, and the use of quinine in large doses alone, or perhaps combined with a moderate amount of phenacetin.

With regard to the treatment of delirium. This is one of the most serious and difficult symptoms that we meet with in pneumonia. Ordinary hypnotics, such as sulphonal and paraldehyde, which are, perhaps, the most suitable, very frequently fail, and in such cases we must have recourse to morphia. But that its use requires the greatest care was once brought home to me in a somewhat tragic manner. A young man, a butcher to trade, but not of very markedly intemperate habits, had a severe attack of double pneumonia, with marked violent delirium from the outset. Sulphonal and paraldehyde were tried, but with very imperfect effects. One night he had a dose of 30 grains of sulphonal, and I was sent for in the morning, about seven o'clock. I found that he had had a terribly excited night, getting out of bed and struggling with his attendants. Both he and they were quite worn out, and they were anxious that something should be done to quiet the patient. I injected a third of a grain of morphia hypodermically. Whilst I was there the patient fell asleep, but he never woke again. I have always been a little afraid of the use of morphia since. I may say that this occurred on the sixth day of the disease.

Dr. Wm. Walls Christie said—My remarks refer only to that form of pneumonia which, in a typical case, has a sudden onset, runs a course of about eight days, and ends by crisis.

That this is an acute specific disease need only be mentioned by me, as facts in support of this view have been stated by those who have already spoken; and this view has been so long before the profession, and is so generally accepted by those who are best qualified to judge, that nothing further in support of it need be said by me at this time.

Viewed from this standpoint, the treatment of pneumonia presents two aspects—

The preventive treatment.

The treatment of the individual patient.

First, let us consider the preventive treatment. Pneumonia is always with us; it is endemic, and frequently also epidemic.

Considering the wide distribution, constant presence, and great mortality of this disease, remarkably little has been heard of preventive treatment, and yet this disease is classed among the preventable diseases.

A question of importance in connection with prevention is the *length of the period of incubation.* This has not yet been determined. The only way to arrive at a reliable decision with regard to it is from great masses of observations by many different men, and as yet we have not enough evidence to enable us to make a positive statement. In some cases I have met with, I considered it probable that it was from two to four days. In one case it seemed nearer twenty-four hours. Here, a Maori came to a pah, where an outbreak of pneumonia was in progress. He came a distance of 30 miles to this pah, and on the following evening he was attacked with pneumonia.

Does one attack protect?—The question of a previous attack is difficult to decide from the patient's statement; on the one hand, because the public do not regard pneumonia as an infectious disease, and so, unless the attack is a severe one, the parents of a child do not remember it so readily as an attack of scarlet fever or measles, and because pneumonia varies so much in its manifestations, as I shall show later on; on the other hand, because the patient may not know whether his attack was one of croupous pneumonia or broncho-pneumonia, or if he uses the term "inflammation of the lungs," it leaves the matter in greater doubt still. When taking a patient's history of a previons attack, it is important that we should sift the evidence thoroughly.

We must not assume that one attack does protect, because this is the rule with the other specific fevers; for, in the *Collective Investigation Record* (vol. ii, 1884), it is stated that there was at least one previous attack in 10 per cent of the cases there classified. If this is correct, the inference that one attack predisposes to another is warranted. Before accepting this statement as correct, however, we would require more particulars of the grounds for stating that the patients had already had pneumonia.

Is pneumonia communicated directly from one person to another?—The fact that pneumonia is the only acute specific disease regularly treated in the wards of our general hospitals, is a very good indication of the feeling of our profession on this point. Nevertheless, clear cases of infection, communicated from one person to another, are on record, although they are uncommon. There is another much more numerous class of cases, of which I have seen several examples, where two or more persons in the same house developed pneumonia within a short time of each other, and usually these were persons who were more together than others in the house, such as husband and wife. These latter cases, however, are not conclusive; for although the *probability* of infection be strong, as when a wife is attacked while nursing her husband, while the other members of the household escape, still there is the *possibility* of a common source of infection.

How, then, is the disease spread?—If we are correct in assuming that the instances of direct infection, both in and out of hospital, are as few as they appear to be, then we must have some common source of origin or carrier of the disease, or the organism of the disease must be very widely distributed, and be called into activity by some special circumstances or combination of circumstances.

We know that in scarlet fever, while infection is readily spread direct from person to person, a very common carrier of the disease is milk, and outbreaks are very frequently traced to this source.

Again, in enteric, while infection takes place occasionally from person to person, the chief means of spreading the disease is through the water supply.

In pneumonia, while direct infection occurs probably not so frequently as in enteric, we have still to find the common source of origin or usual carrier of the disease, or the circumstances which called the organism into activity. The causes generally given are insufficient. They do not give a satisfactory explanation of these outbreaks of pneumonia in institutions and houses which are by no means infrequent. In these, we must look for a definite local cause or carrier of disease, as we do in outbreaks of scarlet fever or enteric.

Let us look at some of the commonly mentioned causes of pneumonia.

Climatic conditions.—These do not afford an adequate explanation, or outbreaks would not be so often limited to institutions. Pneumonia, too, occurs in all climates.

The influence of chill appears to have been over-rated. It seems to me that much confusion has arisen through mistaking the initial rigor for the cause of the attack. It should be clearly borne in mind that the rigor or chilly feeling which is associated with or closely followed by rise of temperature, marks the "invasion" of the disease, and the *end* of the incubation stage. A chill, to be regarded as the cause of the attack, must have occurred at the *beginning* of the incubation period, whatever that may be.

Season.—Pneumonia is more prevalent during the colder months of the year, but that there is no special significance in this is shown by the fact that this statement applies equally to most of the other specific fevers.

In descriptions of outbreaks in institutions, we frequently find mention of various *insanitary surroundings or conditions*, such as close proximity of graveyards, stagnant ponds, overcrowding, &c., but frequently it is also stated that these "same defects had often been present before without giving rise to pneumonia." "Again, the same kind of bad hygiene had been rampant beyond the foci of the epidemic, although there was not a single case of pneumonia associated with it."

Again, *Fraenkel's pneumococcus* has been found in institutions where an epidemic of pneumonia has occurred, by Juergensen, from under the flooring of dormitories; by Dr. Scott, from the dust of a ventilator; and by others. But the significance of this is entirely neutralised by the fact that Fraenkel's pneumococcus is present in the mouth and air-passages of almost all healthy persons.

If season, chills, overcrowding, lowered vitality through insufficient or bad food and excesses, general insanitary surroundings, climatic conditions, and the presence of Fraenkel's pneumococcus are the sole causes of an epidemic of pneumonia, surely the poorer classes of the community should suffer much more than the inmates of a gaol or industrial school, where, although matters are not perfect, they are still immensely better than with a large section of the outside community, who do not suffer to anything like the same extent at the same time.

These alleged causes do not afford an explanation of those outbreaks limited to institutions, which, in their suddenness and localisation, resemble outbreaks of enteric or scarlet fever due to milk or water-borne infection.

It will be seen from what I have said that the preventive treatment of pneumonia has yet to be learned. The only practical steps which I have felt warranted in taking, in treating patients at home, have been to advise free ventilation of the apartment, and that no one should sleep in the same room as the pneumonia patient, in view of the disease being occasionally infectious. When more than one case occurs in a private house or institution, at or about the same time, isolation should be enforced, and also disinfection of the rooms used by the patient and of his bed and clothing.

We must own that our knowledge of the preventive treatment of pneumonia is extremely meagre, but I think we can fairly claim that we have arrived at that stage at which we are dissatisfied with the alleged causes of this disease with which we were formerly satisfied, and so we have moved at least one step towards a knowledge of preventive treatment.

And now, in the second place, with reference to the treatment of the individual case. This will vary according to the nature and severity of the case, and also whether complications are present. There is a very wide range in the severity of cases of pneumonia. In the outbreak in St. Mary's Roman Catholic Industrial Schools, Glasgow, in 1888, four cases were rapidly fatal. Two of these I have recorded in my M.D. thesis, written in 1889, as the first examples of death from pneumonia in which there was no implication of the lungs whatever, as shown by the *post-mortem* examination. There have been cases of death from pneumonia recorded in which it was *thought probable* that there was nothing abnormal in the lungs from the absence of physical signs, but none, so far as I could learn, where the absence of implication of the lungs was proved by *post-mortem* examination.

In one of these cases, a boy, aged 11 years, complained of headache, and vomited. He became comatose, and died in three hours.

The other was a boy, aged 14 years. He was found unconscious when the boys were being wakened in the morning, and died half an hour later. He had been well when he went to bed at night.

The late Professor Coats made a *post-mortem* examination of these two cases, and found in one case the blood extremely fluid, and in both enlargement of the spleen, mesenteric and intestinal glands, but nothing abnormal in the lungs.

These cases are evidently analogous to cases of malignant scarlet fever, where death occurs without a rash having appeared.

On the other hand, some of the patients were taken suddenly ill with headache, vomiting, pain in the side, and the temperature taken on the first complaint of illness was found to be 102° or 103°, but in twenty-four or forty-eight hours they were quite well again. Others complained of headache or of headache and sickness, appeared ill, but had only a slight rise of temperature, or perhaps even no rise of temperature at all, and after a few hours had quite recovered.

Between these extremes we met with cases of many different degrees of severity, about one-fourth of the whole number exhibiting most of the characters of pneumonia as it is met with sporadically. That this outbreak was pneumonia of the kind I am at present alone discussing, there is no doubt.

We had clear association, 66 cases occurring in the boys' school, out of about 200 inmates, and 2 cases occurring in the girls' school—which was situated next to the boys' school—out of about the same number of inmates, within one month, and about one-fourth of the cases presenting the symptoms of pneumonia as it is met with sporadically, and *all* the other patients presenting *some* of the symptoms of the more typical cases.

In the extremely mild or extremely severe cases, symptomatic treatment is alone called for. It is not my intention to say anything at present about the treatment of uncomplicated sporadic cases of pneumonia.

The varying severity and mortality of the disease at different times, or in different places at the same time, is just what is found in the other specific diseases.

In pneumonia, as in the other specific fevers, we meet with various complications and sequelæ. I shall pass most of these without mention, but I wish to draw attention to two serious and important complications. These are empyema and purulent pericarditis. I have had 4 cases of the former and 1 case of the latter in my own practice. Judging from my own cases, and from others that I have knowledge of, I believe that, where a *large* effusion takes place into pleural cavity or pericardium, during or immediately after an attack of pneumonia, that effusion is most likely purulent.

My case of purulent pericarditis occurred in a young adult—a Maori. I confirmed my diagnosis by means of an exploratory puncture. The position of matters was explained to the patient, but he declined operation, and died in a few days.

Cases of this nature should be operated upon. If left alone, they are almost certainly fatal; and a number of recoveries after operation have been recorded in recent years.

Empyema is the most important complication of all, from a practical point of view, because it is by no means rare, because it is very liable to be missed, and because the early recognition of the condition means, in the majority of cases, the difference between life and death to the patient.

Three of my cases occurred in children, and one in a lady, aged 69, who, notwithstanding her age, made a perfect recovery after operation.

Some of the speakers at our previous meeting advised that too frequent examinations of the patient during the course of an attack of pneumonia should not be made, mentioning, among others, the risk of displacing clots from the heart; and I think with them that during the course of an ordinary pneumonia, if the disease appears to be running an uncomplicated course, that it is a mistake to note too minutely the exact physical signs in the chest. But, if there is what might be called an unsatisfactory crisis, if the temperature tends to come down, but does not rapidly reach normal, or after touching normal, rises and maintains a fluctuating course, or, in short, if matters do not clear up satisfactorily after what appears to have been the crisis, then, I say, our duty is to examine and re-examine our patient's chest, back and front, day after day. We should then let no fear of displacing clots or distressing our patient deter us from a full and complete and repeated examination, conducted under the most favourable possible circumstances for us detecting the condition of matters in the chest, in view of this complication. We should also bear in mind how misleading the signs of pleural effusion sometimes are. We may have, as in one of my cases, tubular breathing, or have a tympanitic note over a pleural cavity containing a large quantity of pus. If we have any doubt, we should use an exploring syringe. If this is used with all surgical precautions and with due regard to the anatomy of the parts, there is not the slightest risk, but it should only be used by those who understand fully how to sterilise and keep sterile the patient's skin, their instruments, and their own hands. I use an ordinary exploratory syringe for this purpose. A hypodermic needle is too short and too thin. Several punctures should be made at different sites, if pus is not found.

When empyema is found, it should be operated on early. The method I have found satisfactory is simple incision in an intercostal space. The site of the incision will vary with circumstances; but, in most cases, just in front of the margin of the latissimus dorsi will be found to be most suitable. A tube with a guard is afterwards kept in the wound, and the cavity is frequently irrigated.

We have heard from hospital physicians of large experience how the mortality of uncomplicated cases of pneumonia varies from time to time, irrespective of treatment. But, in those cases of pneumonia complicated with empyema, if the condition is not detected, few will recover; while, on the other hand, if we recognise the condition early, and resort to operation, we will have the satisfaction of seeing recovery take place in the majority of instances.

Dr. Adam said—Mr. President and gentlemen, I will not detain you long with what I have got to say. The papers last evening began with statistics. That induced me to go over my cases for the last six years. They amount to 17 cases, with 1 death. If you eliminate one which I saw in consultation, and where the treatment I recommended was carried out, that gives 1 death in 16 cases, or a percentage of 6¼. Statistics are very misleading, and I do not mean to say that you could, on such a small number of cases as that, found a death-rate. At the same time, I am quite sure that it is much nearer the normal death-rate of pneumonia than the 25 per cent of the Glasgow hospitals. I think that the only value of the statistics of the Glasgow hospitals is to show that they are not a place to send a pneumonia patient. The common ward of a general hospital is even less suited for pneumonia than for phthisis. This seems, to some extent, supported by a very interesting paper by Dr. Barr, of Liverpool, in the *British Medical Journal* last year. Dr. Barr gives the death-rate of pneumonia for 1896. The total death-rate for Scotland, from pneumonia, amongst every 100,000 persons living, is 113; for Glasgow, it is 185; and I think that is a very startling difference. (In my cases, I have only included cases over the age of 10 years. My experience is that pneumonia in children is not a very fatal disease. Dr. Barr says that is popular opinion, and he says it is contradicted by statistics. I should like to know the opinion of the gentlemen present on this point.) My cases included 3 over 70, 2 complicated by very bad emphysema, 1 by mitral regurgitation, 1 by pregnancy. The line of treatment that I have come to rely on in the treatment of pneumonia is this—Good nursing, open window, ice-bag, and the tinctures of nux vomica and digitalis. I do not stick rigidly to a routine, but on these I mostly rely. I only mention good nursing in order to say that, in the case I lost, the nurse used "alcohol as a food." The patient was getting on fairly well, the temperature came down, and I thought he was going to recover; but she allowed him to fall out of bed, and the trouble started in the other lung, and he died. An open window is cheaper than an oxygen cylinder, and by ventilation you get a constant supply of air. Oxygen I have used often enough. I use it frequently towards the crisis, especially if there is much lung involved. But an oxygen cylinder will not carry away carbonic acid gas. An open window and a good fire do that. As to the ice-bag, I use it in most cases, I used to employ poultices, and I still sometimes do so, but in most cases I start with the ice-bag, and continue that. If any one has not tried it, all I have to say is that, if he tries it in about a dozen cases in succession, he will be very much surprised by the gratitude of his patients. Patients will say—"Why didn't you start this thing before?" or, "The ice-bag saved my life." It is a very great comfort to a patient; reduces temperature, pulse-rate, and pain. I apply it regularly to the chest, and not to the abdomen, as Dr. Barr does. With children there is a difficulty, because a child cannot express its feelings, and I go pretty much by the feelings of the patient. I usually apply it continuously to the adult, sometimes two or three days together.

In regard to nux vomica and digitalis, I give the tinctures of each in doses of 5 minims every four hours from the beginning. If anybody has any doubt of the value of giving nux vomica by the mouth, I think he will be convinced by trying it, along with boric acid, in cases of prostatic retention. I think the value of giving it by the mouth is proved by Dr. Lindsay Steven's case, which he mentioned last night. He gave a hypodermic of strychnine, after a course of nux vomica, and the man died in a fit. The strychnine was not an overdose of itself, but it was an overdose relative to the nux vomica already taken.

I cannot say that I have any very rational grounds for giving digitalis, but I always give it. Sir William Gairdner used to maintain that it is a poison in pneumonia. It is a poison to the pneumococcus, it is a tonic to the heart, and, as Dr. Lindsay Steven stated last night, his *post-mortem* experiences showed that the heart does dilate in pneumonia. If the pulse becomes irregular, of course you must watch it. For sleeplessness, paraldehyde, I think, is the best drug. For delirium in alcoholics, I agree with Dr. Middleton that you have sometimes to fall back on hyoscine. What dose does Dr. Middleton recommend?

Dr. Middleton—One seventy-fifth of a grain.

Dr. Adam—I use about half that dose. Dr. Middleton mentioned a case of miscarriage, with subsequent fall of temperature. He thought that might be an argument for bleeding, but I hardly think so. I have seen the temperature come down, and the miscarriage happen afterwards; and I have seen the same thing happen in severe bronchitis complicating mitral stenosis; and to my mind, what happens is that the blood becomes laden with carbonic acid. This acts as a stimulant to the uterus, and *plus* the weakness of the patient and the strychnine which is usually given, brings on abortion. If any manipulative interference with the uterus be needed in such cases, a second practitioner should be present, for the risk of death from syncope is enormous. This did happen in the bronchitis case I have mentioned, and almost happened in the pneumonia case.

I should like to ask what is the experience of members with regard to the character of the effusion in empyema complicating pneumonia. It has been said that a pneumococcus effusion when withdrawn gives a sediment of pus, with clear liquid above, and is curable by paracentesis; while, with the other pyogenic organisms, you get creamy pus, requiring drainage. I have had one case which seems to support this statement.

Dr. Ness said—Mr. President and gentlemen, while recognising that the specific poison of pneumonia may produce manifold pathological manifestations as it affects different organs of the body, and again that pneumonia may be, on the one hand, primary or idiopathic, or, on the other hand, secondary to such diseases as influenza, tuberculosis, diphtheria, enteric fever, &c., I wish it understood that in the remarks which I now make I refer to lobar pneumonia, pure and simple—pneumonia, independent of any other disease, and uncomplicated by such conditions as empyema, pericarditis, and meningitis. Pneumonia, however, as I deal with it, may assume a grave aspect from hyperpyrexia, delirium, insomnia, cardiac failure, or such pulmonary condition as bronchitis or collateral œdema.

In dealing with a case of pneumonia, I take it that the chief dangers arise—

First, from the action of the toxin or toxins on the nervous system, with the production of pyrexia, delirium, insomnia, &c., and the possible profound involvement of the vital centres (cardiac, respiratory, vasomotor) in the medulla oblongata.

Second, from the involvement of respiratory organs, as evidenced by the local manifestations of the diseases in the consolidated lung, the danger being in some measure commensurate with the amount of pulmonary tissue involved; and, further, as evidenced by the great strain, and it may be exhaustion, of the nervo-muscular mechanism carrying on respiration.

Third, and most important, from the tendency to failure of the heart, arising from several causes:—(*a*) The action of the poison on the nervo-muscular mechanism of the heart, (*b*) the granular degeneration of the cardiac muscle under the influence of high temperature, and (*c*) the overloading and distension of the right ventricle consequent on pulmonary obstruction, and intensified by the negative pressure within the thorax being diminished.

Associated with this condition of the right side of the heart is the general venous engorgement and a degree of arterial anæmia. This last fact tells again on the heart itself by diminishing the nutrition of the heart-muscle from lack of a proper supply of blood through the coronary arteries.

In fatal cases, then, the issue may be determined by the brunt of the disease falling on the nervous system, the respiratory system, or the circulatory system. In most cases, however, death results from cardiac failure.

In determining the right treatment to adopt in pneumonia we must recognise that the disease will cure itself within a limited period, if the patient's strength holds out. We must, therefore, sustain the patient's strength by good nursing, proper ventilation, light clothing, and proper feeding.

Milk, most are agreed, is the best form of food. It will sustain patient if 3 pints are taken in twenty-four hours. If thirst is great, it is best diluted. If it disagrees, it may be peptonised.

Beef-tea or clear soup should also be taken, not to replace the milk, but to supplement it. There is no comparison, as Dr. M'Vail pointed out, between the two, but neither is there between beef-tea and alcohol. Beef-tea is a good food and a good stimulant, and is to be preferred in the early stages of the disease to alcohol, which is a good stimulant, but a poor food.

Farinaceous foods are not easily digested, from the diminution of the digestive secretions, hence should not be used, unless in the form of such foods as Benger's, which is pancreatised.

Another indication of treatment is to try and diminish the amount of toxins circulating in the blood. In this connection permission should be given to the patient to drink water freely. He is grateful for it, and it does good by promoting the action of the excretory organs, and hence diminishing the toxins circulating in the blood. The only possible objection to this is in the case of children who will not take nourishment. It is often necessary in their case to withhold the water, in order to make them drink the milk. This is seldom necessary in the case of adults.

Medicines which act in a similar way to water are the salines. These also promote freer action of the excretory organs.

The neutralising of the toxins by serums is not yet possible.

Lastly, we have to consider the action of certain remedies used to counteract the effects of the disease in the nervous system, circulatory system, and respiratory system.

The first agency at our disposal is cold, applied externally to the surface of the body.

I will not dwell on this part of the subject, beyond remarking that tepid and cold sponging may not influence temperature a great deal, but it does so to some extent, and is very comforting to the patient if done by a trained nurse who knows how to do it.

The use of packs and baths requires many to assist, involves much labour, and exhausts the patient. The means for giving the bath in a private house are not always available.

Of much greater value in pneumonia is the ice-bag used after the plan of Lees, or the abdominal ice-bag used after the plan of Barr, of Liverpool.

Lees (*Clinical Journal*, 2nd November, 1892) advocates the application of the ice-bag to the affected side. In his hands it reduces temperature and induces a remarkable change in the physical signs in the lung, indicative of a diminution in the inflammatory process.

Barr, of Liverpool (*British Medical Journal*, 16th June, 1900), on the other hand, advocates that the bag should be applied to the abdomen, as affording a large cooling surface. The cold acts in the splanchnic area and reflexly raises the general arterial pressure, and in the end diminishes the frequency and increases the depth of respiration.

He believes, too, that he obtains a reduction of temperature as well as a diminution in the inflammatory process going on in the lung.

Ice poultices may be used instead of the ice-bag, but there is trouble from leakage when not properly made. These applications are of use only if begun at an early stage of the disease. Care must be taken in applying them to very old or very young patients.

Warm moist poultices, on the other hand, are preferred when resolution has begun.

Opium, like most other drugs used in the treatment of pneumonia, has been lauded by some, and condemned as a poison by others. This arises from the fact that in the hands of some opium has proved disastrous, while in the hands of others it has been found of inestimable value.

Now, in the discussion which took place last evening, I think Dr. Middleton alone referred to the grave danger of opium, while Professor Stockman and Dr. M'Vail dwelt on the advantage rather than the danger. I left the meeting of the Medico-Chirurgical Society that night deeply impressed by the latter, because hitherto I had always acted more in accordance with the views propounded by Dr. Middleton, and which agreed with the principles of our old teacher, Sir William T. Gairdner. He undoubtedly did, in his latter days at least, regard opium as a drug of extreme danger in pneumonia.

I hold the view very strongly that opium is of great danger, though it may be used successfully at certain periods of the disease, and in the absence of certain conditions of the heart, lungs, and kidneys. I don't think that these dangers can be dismissed with the simple reservation that bronchitis or œdema of the lung must be absent when opium is administered. I think the danger is at a minimum and the advantages greatest when morphia is administered hypodermically to an adult in the early stages of the disease, where there is as yet no indication of cardiac failure, and where there is no extensive hepatisation of the lung, and in absence of bronchitis or pulmonary œdema.

For example, morphia may be used for the relief of pleuritic pain present at the beginning of the illness, and to produce sleep at the same period when simple remedies fail.

On the other hand, opium is the most dangerous drug you can give under the opposite conditions—when the patient is young, when given at a late period of the disease, when the heart is weakened and the pulse soft, and where there is every probability of the presence of some degree of bronchitis or pulmonary œdema. The danger of the drug under such conditions should dwell with us far more than the safety under the circumstances first mentioned. The danger arises from the fact that, while it acts to some extent as a cardiac depressant, it acts much more powerfully as a respiratory poison.

When a man dies of opium poisoning, he dies not so much on account of failure of the heart as failure of respiration, and he dies not because he has been asphyxiated by bronchial secretion which he has been unable to cough up, but because of failure of respiration. That should teach a lesson. It should be remembered that in giving opium we are using a poison which acts on the respiratory condition. The power of respiration has been taxed, if not to its utmost, to a very considerable extent, as is evidenced by the rapid breathing. The administration of a dose of opium which is necessary to induce sleep, may lessen respiratory power, and, if not directly, at least indirectly, thereby throw more work on the heart. This effect is altogether apart from the presence of œdema or bronchitis, but the danger is greatly intensified by their presence, and they are conditions which, to my mind, are not an uncommon accompaniment of pneumonia.

I would point out further that in a high fever opium does not always act well. It often increases the tendency to delirium. That is the reason why tartar emetic and opium have often a much more sedative effect than opium itself. Through the depressant action on the heart, the first drug reduces temperature, and the opium acts much better when this reduction is effected than when given alone. But the depressant action of antimony on the heart is one of the good reasons why it has been almost entirely given up in the treatment of pneumonia.

The height of the temperature, however, when there is much delirium in insomnia, should not be lost sight of, because simple antipyretic measures, such as sponging with ice-cold water, and the application of ice-bags to the abdomen, may effect a good deal. Your patient may, under the treatment, become quiet and restful without any sedative. If you do give the sedative, it will act better.

Other sedatives may be employed besides opium. Paraldehyde in 1 to 2 drachms is safe, and a powerful hypnotic. It is only in enormous doses that it weakens the heart or acts on the respiratory centre. Chloralamide is also safe in 20 to 30 grains. It has little or no depressant action. It is difficult to dissolve, slow to be absorbed, and takes some time to act. This may be got over by dissolving it in spirit, and adding warm water. It is safer than chloral hydrate, which is a cardiac depressant.

The different speakers in the discussion have referred to alcohol chiefly as a food or as a stimulant.

Alcohol has been called a food because it is to some extent oxidised, and to some extent diminishes the oxidation of the fixed proteids in the tissues; but in doing this it can never take the place of a natural food, and the name, therefore, is unfortunate. On the other hand, to describe alcohol as a mere stimulant, is not to give alcohol its full value. It is both a food and a stimulant, but something more—for example, it is antipyretic.

Even if we accept the fact as proved that it acts as a food, you cannot give it in great amount irrespective of its other effects. If in giving alcohol early in pneumonia, and in fair or even large amounts, you can show at the same time a beneficial effect on the nervous system by the patient becoming calmer, and the temperature falling, and on the circulation by the strengthening of the heart beats and slowing of the pulse, you would, with effects such as these, be quite entitled to give alcohol early. But, in my experience, you seldom get such an effect from alcohol when given early. On the other hand, there is often a tendency for the pulse to quicken, the respiration to be hurried, and the patient to become restless under its influence. These are the points which come under your observation, and these are the points by which you must determine the giving or withholding of alcohol.

Alcohol, to some extent, does act as a food, but the effect of alcohol and amount you should give can only be gauged from the effects just mentioned. Its use as a food is quite subservient to its use as a stimulant. This being so, it should be remembered that it is a diffusible stimulant which acts promptly, and that it can be called to our help at any moment. Therefore, it is unnecessary to give it before there are distinct indications for its use. At the outset of the illness, when nourishment is being taken freely, there is no call for it. Towards the crisis, when digestion is most impaired, the pulse soft, and the heart failing, improvement under its influence is often very apparent. To give alcohol early in the disease is to me like whipping a horse uphill. It will arrive at the top all right if you give it time, but if you run it up it may collapse half way. The best effects of alcohol, then, are obtained towards the end of the disease. It assists in tiding the patient over the crisis, and seldom requires to be given in more than moderate doses (4 oz. to 6 oz. in twenty-four hours).

The situation, as Professor Stockman pointed out, is very different in the case of digitalis. This drug requires to be given for some days before you get its full effect. Therefore, you cannot use it when you wish a prompt action. You have to begin its administration at an early period. Once the effect is got, it can be maintained. If, in spite of digitalis thus given early, the heart fails, the alcohol may be given as well. The combination will do well, because the constricting power of digitalis on the arterioles will prevent any further softening of the pulse from the effect of the alcohol.

The advantage of digitalis is that it assists the overloaded right side of the heart by increasing the force of cardiac contraction, and at the same time lengthening the diastole. Digitalis does not always succeed. Brunton and Cash showed long ago that heat had a paralysing effect on the vagal orinhibitory mechanism of the heart, and the heart was accelerated just as if the vagi were cut.

Now, digitalis acts partly through this mechanism stimulating it, and then slowing the heart's action. A very high temperature may, therefore, to some extent interfere with the action of digitalis, but not altogether, because digitalis acts in the cardiac muscle directly as well.

On the value of strychnine there is very little difference of opinion. It is a cardiac stimulant, acting promptly when given hypodermically, but more sustaining than alcohol, though less so than digitalis. Its action, however, is sure, as compared with digitalis. The reputation of digitalis was gained for its effects on valvular diseases of the heart, when the temperature is usually normal or nearly so.

The value of strychnine, on the other hand, has been proved under circumstances where digitalis has failed. Strychnine in pneumonia has the further advantage of being a respiratory stimulant and a contractor of peripheral blood-vessels.

Caffein holds the same position as alcohol, and may be given along with strychnine or digitalis if desired.

I believe in the efficacy of oxygen when there is great lividity and respiratory distress from great involvement of the lung. If there is only a small portion of lung surface capable of carrying on respiration, pure oxygen is naturally to be preferred to the ordinary atmospheric air. Under the influence of oxygen the lips become more ruddy, the breathing lessens in rapidity, there is even a beneficial action detected in the pulse and the action of the heart. The effect, as Dr. Middleton said, is not long sustained, but that is not the fault of the oxygen, but the difficulty in the supply. If there is no great involvement of the lung, that is beyond, say, one lobe, but evidence all the same of extreme nervous disturbance and tendency to cardiac failure, the oxygen is not likely to prove of any value, even although associated with dyspnœa. It is cardiac stimulation and the reduction of temperature which will assist most.

Expectorants are undoubtedly of value if bronchitis supervenes, but should be combined with cardiac stimulants.

Dr. Cowan said—Sir, it seems to me that in the course of this discussion the question of cardiac failure has been one of the most important points touched upon. For some time past I have been investigating cardiac muscle, but only incidentally that of pneumonias, and I find that I have only examined eight hearts from cases of this disease. Of these eight patients, four were above the age of 50, while seven had hearts that were damaged texturally, damage which had occurred previous to the pneumonia. Looking at the cardiac muscle in acute disease generally, the thing that strikes one is that there seems to be very little structural change due to acute disease. Chronic disease is much more liable to lead to structural change, and very often does so. Well, of these eight cases, in four there was general atheroma, only in one, however, very marked; in six, there was distinct atheroma of the coronary arteries; in three, there was pericarditis; and in three, there was slight fibrosis of the myocardium. All these conditions, except the pericarditis, you see, are entirely outwith the pneumonic condition. In one case there was fatty infiltration, and in another there were minute hæmorrhages into the muscle. Two were fatty. Now, if you look at the books, you will find that they say that you do get fatty changes in the cardiac muscle in acute disease. But this is not at all the rule; and in acute disease generally, fatty changes there are the exception, and I believe are not primarily produced by the acute disease. They are, however, produced very markedly by alcohol, and both of these pneumonic patients that had fatty hearts were alcoholics. The history obtained in hospital patients is, of course, somewhat open to doubt; but of four cases who died of pneumonia, who were said to be alcoholic, two had markedly fatty hearts, and from what I have seen in other cases, I have little doubt that alcoholism—especially considering the quality of the whisky that one gets in the public-houses of Glasgow—leads very distinctly, and very early, to the production of fatty heart. There is one change that you get in the hearts of cases of pneumonia. It is a change that is common, however, to all disease, local or general, which leads to impairment of the nutrition of the cardiac muscle. You get it in pneumonia, you get it in stenosis of coronary arteries, you get it in the fibroid heart, and this is the granular degeneration. Now, I can define granular degeneration very shortly, for it consists essentially of the loss of a large portion of the central fibril bundles of a muscle cell; and that, I think, is the reason why digitalis, which acts only, I believe, on the muscle fibre, is, in pneumonia, an inferior stimulant to alcohol, ammonia, strychnine, and other drugs which have an effect on the other organs as well.

Dr. Howie said—Mr. President, I was much interested in the last remarks by Dr. Cowan about alcoholism. Alcoholism, I am sure, gives the worst possible prognosis in cases of pneumonia. I believe that a chronic alcohol patient is almost certain to die from it. That is my experience in connection with that matter.

With reference to the treatment, there are one or two points that I wish to refer to, and the first is to carbonate of ammonia. I have found it exceedingly useful in cases of lobar pneumonia where the temperatures have been high. I think it is an excellent stimulant in these cases, and also, I believe in the use of poultices, but prefer to have them alternately applied to the front of the chest and to the back. I use linseed meal and mustard, about one-sixth part of mustard with linseed meal.

Regarding the treatment of sleeplessness, there is one drug that I have tried recently with very good results, in elderly patients, and that is trional. It is a drug that I have found very useful in one dose of 24 grains, given about 10 o'clock, very largely diluted with a breakfast-cupful of warm water. That has succeeded when other remedies have been tried without the slightest effect, and the result has been that the patient has awakened quite refreshed without any gastric symptoms whatever.

Dr. Neil Carmichael said—Mr. President and gentlemen, at this time of the night, I am not inclined to detain you long, but I wish to make a few remarks mainly as to the lines of treatment which I have followed, as the result of a lengthy experience. As to specifics, we must acknowledge that we have none, notwithstanding that we have had frequently put before us the statement that quinine, opium, and other such medicines, used early and used freely, have aborted pneumonia. Personally, I have no acquaintance with such aborted cases as the result of such treatment, and have no inclination to try these methods. We must include pneumonia in the list of infectious diseases tending normally to resolution and to cure, if the patient's strength is reasonably maintained, and if complications and disasters are skilfully avoided, as they frequently may be in pneumonia cases.

The routine treatment of pneumonia should be founded on the lines of normal hygiene. The patient should be kept very quiet, all forms of disturbance carefully avoided, and he should be handled as little as possible. The patient requires to be well fed, but being well fed does not mean being filled with a variety of indigestible foods.

Milk, peptonised or plain, given with mineral waters or alkalies if necessary, beef-tea, perhaps now and again soups that are digestible, constitute, so far as my experience goes, the main lines of the feeding.

Should we stimulate in the early stages of the disease? If the disease is running a normal course, if the patient is progressing favourably, if the heart is not yielding too readily and showing signs of undue weakness, we should avoid stimulants, as we should avoid the use of depressants or of other interfering agents. That is a sound and safe principle on which to act. As to dealing with the dangers and difficulties of the case, probably the first that meets us, as a rule, is pain. The application of a hot poultice, linseed meal, perhaps with mustard, is as good and as safe as any remedy that can be used. But I would be strongly averse to poulticing continuously and poulticing for any length of time, because of the disturbance of the patient, because of the fact, again, that it is really unnecessary in those cases, and because it probably, apart from relieving pain, does comparatively little good. But I have frequently found the use of cold compresses applied to the affected part, instead of a poultice, of great service—in the first place, in reducing the pain, and, in the second place, as a very good antipyretic. This, on the whole, is safer than the use of baths, which necessitate considerable handling of the patient, and which, in consequence, tend materially to disturb his nervous system, and possibly his heart. Besides, also, the use of the bath, with the immersion suddenly in cold water, has a very disturbing effect on the nerve centres, which are not very able, under these circumstances, to recover their balance.

Cold sponging has been referred to, and there is little doubt that it is often of great service in high temperatures, but very frequently the local application of compresses, changed frequently, will be found serviceable. These will disturb the patient very little, and will cause no shock, especially if the surface of the compress has the chill taken off by being held in the hand for a few minutes, or at the fire for a moment, or is prepared with water not absolutely cold. Its antipyretic action is very satisfactory, and it does not tend to exhaust the patient.

The patient is frequently troubled with a cough, which is frequently a serious difficulty. I dislike giving much medicine of any kind, even of the nature of cough mixtures, although sometimes one is driven to it, but if the cough mixture is given, it should not contain any depressant medicaments, such as ipecacuanha or antimony; and, perhaps, such a thing as chloride of ammonia forms a rather better expectorant than most of the others, because it tends materially to thin the mucus and to aid in its expulsion. Sometimes a little opium is useful; but, of course, we have all a natural aversion to the free use of opium, and I have seen more than one death which I feel strongly inclined to attribute to the rather generous use of opium.

As to cardiac failure, which is one of the principal difficulties and dangers of the case—if we do not stimulate in the early stages, if we allow the patient to do without stimulants while the case is progressing normally, when signs of cardiac failure show themselves, the use of stimulants may be of very considerable value. What kind of stimulant should be employed? Is it to be alcohol, or strychnine, or ammonia? Each man will act according to his own experience in general practice. I prefer the use of strychnine, and somewhat freely use it, alone or with digitalis, sometimes even with ether, but I have no scruple as to the use of alcohol, if alcohol is serving the purpose, and I am very much pleased that Dr. Ness has so definitely laid down the conditions under which alcohol should be administered. If when alcohol is given, it is not found that the general condition of the patient, including the condition of his nervous system, becomes more satisfactory, there is no more reason why we should push the alcohol drug because of custom, than there is that we should push any other medicament when it has ceased or when it fails to serve the purpose that we have in view. The use of strychnine I have found exceedingly satisfactory in strengthening the heart's action, and, in consequence, in giving relief to many very distressing symptoms, such as dyspnœa, and I consider it more safe and more effective than alcohol.

The essence of the treatment of pneumonia is to place and maintain the patient in such normal condition, as far as possible, as will enable his system to fight with an enemy which is of the nature of a toxin.

In the bedroom, we should insist upon good ventilation. In private houses, there is in the treatment of pneumonia frequently a serious failure on this point. In an imperfectly ventilated room the well person, the nurse or the doctor, may feel the atmosphere stuffy, and if long in the room, may be very uncomfortable, but the patient, whose respiratory powers are seriously crippled, may be very badly damaged. It should be laid down as a primary condition that the room in which the pneumonia patient is treated should be thoroughly well ventilated, and open, as far as possible, to sunlight. Air and sunlight are curative in pneumonia, as in many other diseased conditions.

Dr. Dun said—I desire to congratulate the Society on the success of this discussion, on the able manner with which it has been conducted, and on the interest it has evoked on the part of members generally.

I had jotted down some things to which I had intended to refer, but I find that everyone of these subjects has already been so well dealt with that I am almost entirely absolved from saying anything further. I would like, however, to emphasise what has already been said with regard to the desirability of sending patients suffering from pneumonia to hospital at the earliest stage of the disease possible. It is not unlikely that the high hospital mortality of pneumonia is due, to some extent, to many cases being admitted at an advanced stage of the disease, and that the fatigue of the removal from their homes to the hospital has helped to precipitate the fatal issue.

One thing that struck me forcibly in the discussion is the entire absence of any reference to modern antipyretics, such as antipyrine and phenacetine. In the reduction of high temperatures reliance seems to be placed mainly on the application of cold to the surface of the body in the form of sponging with cold or iced water. I have never used the ice compress Dr. Carmichael has referred to, nor have I tried the continuous use of the ice-bag, but after hearing Dr. Adam's experience, and particularly after reading the cases narrated by Dr. James Barr in his most excellent paper,[1] I shall certainly give it a trial.

It was interesting to hear the different opinions expressed with regard to opium. On the whole, opinion was adverse to what most of us were taught, and what is still strenuously held by some, that opium in pneumonia is a most dangerous remedy, particularly in the later stages of the disease. Now, many of the speakers in this discussion have been favourable to the use of opium—morphia especially—in small doses through the whole course of the disease. Dr. Stockman said,

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[1] *British Medical Journal*, 9th and 16th June, 1900.

I think, he had never seen harm result from the use of a sixth of a grain of morphia administered subcutaneously. This view as to opium is held by many most distinguished men, amongst others by Sir Samuel Wilks,[1] who expresses himself as satisfied when he sees a patient with pneumonia taking a saline and 5 grains of Dover's powder every four hours. He states, also, that Sir William Gull ordered opium in pneumonia up to his last day.

There is one point which has only been incidentally noticed, and to which I would like to refer—that is the danger of thrombosis occurring in the right auricle and ventricle of the heart. Dr. Barr narrates a most striking case in which this condition arose. Perhaps I did not interest myself sufficiently in it at the time I read his paper, but after hearing the communication made to this Society by Dr. Adamson[2] on a recent occasion, one cannot help being impressed with the possible danger of cardiac thrombosis in the course of pneumonia. I am inclined to think that hitherto we have overlooked this condition too much.

The last thing I would allude to is venesection. This has scarcely been touched upon by any of the speakers. Perhaps one reason why no notice was taken of it is that many of the speakers gave chiefly the experience of their hospital practice, in which cases are often not seen at the early stage when bleeding might be resorted to with advantage, and another, that nearly all who took part in the discussion are practitioners in Glasgow or its suburbs, where the type of individual is not such as is likely to do well with venesection. We must recognise that in towns and manufacturing districts blood-letting is, speaking generally, not a suitable remedy. I have no doubt it has its place in the treatment of pneumonia, and those who are fortunate enough to practise in country districts amongst strong plethoric persons will confirm this opinion.

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[1] *Practitioner*, February, 1900, p. 135.

[2] *Glasgow Medical Journal*, December, 1901, p. 406.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1901-1902.

MEETING III.—18TH DECEMBER, 1901.

The President, DR. ROBERT JARDINE, *in the Chair.*

I.—FRESH SPECIMENS.

DR. J. K. KELLY showed two specimens of pyosalpinx, one being of unusual size, and removed entire.

The following specimens were shown to illustrate the discussion on the treatment of fibro-myoma of the uterus.

A. BY DR. JOHN EDGAR.

(1) Removed by torsion of pedicle combined with snipping—a polypus which simulated inversion of uterus; (2) removed by enucleation and suture—two cases of senile submucous fibro-myoma of fundus causing inversion of uterus; (3) removed by morcellement and suture—large fibro-myoma of anterior lip of os uteri; (4) removed by cutting through pedicle and suture—two pediculated subperitoneal fibro-myomata of fundus uteri; (5) supravaginal amputation of uterus—six specimens, including a gravid uterus and one complicated with cancer of corpus uteri, fibroid uterus with large hæmatoma of ovary; (6) total abdominal hysterectomy—four specimens, including a submucous myoma associated with a suppurating ovarian cyst.

B. BY MR. R. H. PARRY.

(1) Uterus with fibroid, removed at full term, Porro-Cæsarean operation; (2) fibroid, removed fifth month; (3) fibroid, hysterectomy; (4) fibroid, hysterectomy (bladder was freely opened); (5) fibroid, hysterectomy; (6) fibroid, hysterectomy (soft myoma with ascites); (7) four intramural fibroids, removed by enucleation.

C. BY DR. J. K. KELLY.

Sixteen specimens obtained by various methods of operation, and illustrating various situations and complications of uterine fibro-myomata. (1) Carcinoma and myoma; (2) pregnancy and myoma; (3) polypi; (4) subserous and submucous fibroid; (5) various fibro-myomata obtained by enucleation, excision, vaginal, supravaginal, and total hysterectomy.

II.—DISCUSSION ON THE TREATMENT OF UTERINE FIBRO-MYOMA.

Dr. John Edgar opened the discussion. Dr. Edgar's paper appears as an original article at p. 161.

Mr. R. H. Parry said—In responding to the Secretary's invitation to speak to-night on the surgical treatment of uterine fibroids, I feel it would be better that I should confine my remarks more or less to the methods which I follow in my own practice.

In the twelve cases I have operated on during the past two years, I seem to have come across an unusual number of complications, some of which the specimens I show here to-night will serve to illustrate.

In two cases the tumour was associated with pregnancy, in one of which it was so jammed in the pelvis as to necessitate removal of the child and uterus at full term; and in the other its presence became manifest at the fourth month, during a smart attack of peritonitis, which produced extensive adhesions between the growth and the cæcum and small intestines.

In four others the attachments to the pelvic organs were intimate, and in one of these the bladder was freely opened, and in another the rectum.

Ascites and an indefinite pulmonary condition were the complications in the seventh, and heart disease in the eighth.

In the remaining four cases, anæmia, consequent upon prolonged hæmorrhage, was very marked. I have been rather surprised that so many of my cases proved to be either difficult ones to treat or were bad subjects for operation, and I may suppose that the simple or uncomplicated case comes more under the notice of the gynæcologist.

All the cases recovered, and in none, I may say, was there evidence of much shock after the operation. Happily, the results of hysterectomies, both in this country and abroad, have shown marked improvement within the last few years, and I believe this to be due to (1) the greater care in securing thorough asepsis; (2) to the improved *technique* of the modern operation; (3) to the greater experience and dexterity of the operator; and (4) to the adoption of measures to prevent shock.

There can, I think, be no difference of opinion on the first three points, and I shall, therefore, not dwell upon them directly; but it may be of interest to you to hear what measures I adopt to prevent shock when dealing with the class of case such as I have referred to to-night.

I arrange my cases either before operation, or immediately after opening the abdomen, into one of two groups—

1. The first includes those in which the general condition gives cause for anxiety, those suffering from heart disease or from any other condition likely to make them unable to bear shock; also those which from the nature and size of the tumour make the operation a prolonged and difficult one.

2. The second includes those in which the patient is in a fairly good condition, and on whom a more thorough operation can be carried out.

In the treatment of the first group, I follow, to some extent, the practice of Doyen, of Paris, *i.e.*, to shorten the operation as much as possible.

I encourage the patient to rest in bed for a week or two, and during this time the diet and the action of the bowels are carefully attended to. Digitalis and strychnia are given if called for. A nutrient enema, containing 4 oz. of peptonised milk, 20 in tincture of opium, and 2 to 4 drs. of brandy is given the evening before operation. In the interest of the patient I like to operate about 9 A.M. The anæsthetic used is chloroform and A.E.C. mixture, ether being rarely given.

The patient is placed in the Trendelenburg position, and the vagina is finally cleaned with soap and water, and boracic solution or very weak carbolic solution, and the abdomen and thigh with spirit of soap, methylated spirits, and carbolic solution. In the meantime, an assistant introduces two or three pints of saline solution into the median basilic vein. One or two gauze bandages are introduced into the vagina, and held there by vulsellum forceps.

The abdomen is opened midway between the umbilicus and the pubes, and through an incision about 2 inches in length the pelvis is explored.

If the tumour is large, and likely to give trouble in removing, the wound is enlarged upwards and downwards by means of strong scissors, in preference to a series of cuts with a knife, the object being to prevent the separation of the structures, thus simplifying the closure of the wound.

About a pint of salt solution is introduced into the abdomen, and the small intestine pushed upwards, and covered by large pads of gauze.

The broad ligaments are then clamped, the assistant repeating each step on the other side as far as is possible and convenient for two to work in what I elect to call a small wound.

Short pressure-forceps are placed over the uterine end of the tubes, and the broad ligament divided.

The peritoneal coverings of the uterus are incised usually high up, and the organ seized and dragged upwards; the uterine arteries are then looked for and tied, but if the condition of the patient gives any anxiety, and the cervix is found to be free, a strong catgut ligature is passed round the latter and the uterine arteries; and the uterus and tumour rapidly removed. When, however, this is not called for, the vagina is opened in front and behind, and the entire uterus is taken away.

At this stage the broad ligaments are tied, and the clamps removed, and the pelvis freely irrigated with warm saline solution.

The peritoneum and the vaginal walls are all included in each suture, and usually about half a dozen are required to close the wound.

The pads are now withdrawn, warm saline solution introduced, and the wound closed by silkworm stitches passed through the entire thickness of the abdominal wall. Dry dressings are applied, and one or two glass tubes containing iodoform gauze are inserted into the vagina. The time employed in performing the operation varies from thirty to fifty minutes, according to whether there is any damage to bladder or rectum to be repaired.

In the second group I do not follow Doyen's practice so closely, as when at all possible I think it advisable to arrest all hæmorrhage, and thus do away with the necessity for drainage, packing the vagina, and frequent dressing; and also to secure a strong pelvic floor, and to close the abdominal wound very carefully in order to guard against hernia.

All these details absorb time, but under favourable conditions I certainly think they ought to be attended to.

A double row of catgut sutures is passed in the pelvis—the first a Lembert suture through the edges of the vagina to direct the bleeding edge into the vagina; and the second, a continuous suture through the peritoneum.

In the closure of the abdominal wound the peritoneum and aponeurosis are stitched separately, the skin and muscles together, by silkworm sutures.

I have been particularly struck by the slight disturbance after this operation. Vomiting is usually slight, and in some cases it has been absent altogether, whether as the result of careful preparation or the injection of saline solution into the veins, I cannot state definitely, but the subject is under consideration, and I hope to be in a position shortly to give the result of my investigations.

The glass tubes in the vagina are removed at the end of the first week, the douche is used then for the first time, and the abdominal wound looked at in the third week, when the stitches are taken out.

The use of the catheter and the administration of nutrient enemata are the only causes of discomfort to the patient, and in some the recovery was as uneventful as that after a simple ovariotomy.

Dr. Samuel Sloan discussed the medical and electrical aspects of treatment, and said—I have little to say in the way of criticism of Dr. Edgar's paper, except that I shall have to differ from him in some of his conclusions regarding electrolysis, premising only that I consider his remarks on this treatment as fair and judicial in view of his experience of it.

Regarding the medical treatment of fibro-myomata, I consider it of use principally in the treatment of complications; though a case, of which I have full notes, extending over a period of thirteen years, shows that ext. ergotæ and nux vomica combined have a distinctly beneficial influence in reducing the size of the tumour, or else that these tumours do diminish, temporarily and materially, without active medical treatment. I show you carefully drawn outlines of the mass in this case; showing that in one year the portion of it situated above the pubic line diminished from 26 square inches to 17; the mass afterwards increasing and diminishing, till now, thirteen years after the first outline was taken, when it slightly exceeds its then measurement. As the total mass of tumours was steadily increasing from its condition in the outline dated September, 1888, daily doses of ergot and nux vomica were ordered. These drugs have been taken, with occasional periods of cessation only, during the whole time; the tumour apparently increasing during the periods of cessation. No harm whatever has resulted to the patient, although for thirteen years ergot has been thus steadily administered.

I am pleased that the Secretary has requested me to state the result of my experience of electricity in the treatment of this affection, because it has led me to revise my work, with the object of clearing and crystallising my impressions regarding it.

Let me say, first, that whatever ultimate decision may be arrived at regarding the effects of electrolysis, I feel sure that Dr. Apostoli has rendered a signal service to the profession by his scientific methods, which have done not a little to remove this, undoubtedly valuable, therapeutic agent from the hands of unqualified, though probably honest practitioners, into those of medically qualified and scientific observers.

Electrolysis, in the treatment of fibroids, has, in my opinion, suffered from being over-praised and "boomed." The choice of the name electrolysis, for this use of electricity, is partly to blame for this; everyone probably, like myself, attributing the *modus operandi* of the treatment to be by an electrolytic effect on the tumour itself, besides the caustic effect immediately around the positive pole, which effect is really electrolytic. I believe, however, that no evidence has been forthcoming to prove that any really electrolytic effect is ever produced in the tumour, unless where this is submucous or in very close proximity to the mucous membrane of the uterus. In such cases the tumour may be really electrolysed, local stasis of the circulation being induced by coagulation, and to that extent some absorption resulting after each application. There is thus true polar electrolysis, but no interpolar electrolytic action. This, however, is a dangerous and unsurgical method of treatment, though probably less so than puncture, of which I have no experience. That this is the sense only in which the treatment is electrolytic is evidenced from a reference to the kind of cases in which it is said, by those who recommend it, that electrolysis is beneficial, namely, in recent highly muscularised and undegenerated tumours, either submucous or interstitial, and not in old-standing or subperitoneal or degenerated fibroids. If interpolar electrolysis were really at work here, the suitable cases should be the unsuitable, as being more highly vitalised, and therefore less amenable to electrolytic influence; whilst the unsuitable ones should be the more suitable, as less vitalised, and therefore more amenable to electrolytic degeneration and absorption. This will, perhaps, in part explain the diversity of opinion regarding the use of this agent.

The following quotations from recently expressed opinions of reliable authorities may be cited to illustrate this diversity of opinion:—"Has amply fulfilled my sanguine anticipation; has a decided curative action." "In the near future we may have to record that electricity in the treatment of fibroids is obsolete." "Eighty per cent of all cases can be treated with great benefit, and the tumour reduced in size." "Out of 372 cases, only 9 were cured, and 5 died."

Two facts are obvious from this attitude of the profession towards this treatment. First, that some benefit has undoubtedly resulted from the treatment as carried out by some operators; and, second, that in the hands of others the treatment has proved useless or dangerous.

What, then, are its benefits; what its dangers; and why has the result of the treatment been so varied? The beneficial effects, where these have followed, have arisen from, first, the electrolytic action on the endometrium at the positive pole—or rather on that portion of it around the platinum probe—this action being astringent and antiseptic; the latter by the evolution of oxygen gas. This is the result where moderate doses are employed. With large doses, as 100 to 250 milliampères, the effect will be more of the nature of a severe caustic. Thus, hæmorrhage will be arrested, and the unhealthy condition of the endometrium will be modified beneficially. The interpolar effect will be a galvano-tonic contraction of the muscular tissue of the uterus proper and of the tumour, with a tonic action on the abdominal viscera and on the abdominal sympathetic. That this action in moderate doses may result in good only, and be in no way dangerous, is well illustrated by a case, though not of fibroid, which I should like to relate.

Mrs. D. called upon me in December, 1894, for relief of sterility, stating that she had been four years married and had never been pregnant. She had had a course of intrauterine medication in a "home," with no benefit. Her health was poor, and when I proposed electric treatment, she said she was thankful that I could suggest something new, as nothing had hitherto been of any avail. After some preliminary treatment for some fulness and tenderness in the left fornix, utero-abdominal galvanisation, as in electrolysis, was employed, the sound measuring $3\frac{3}{8}$ inches. Currents ranging from 50 to 80 milliampères, for seven minutes at each sitting, were employed. This galvanic treatment was begun on 24th January, 1895, and five applications in all were given. The result was that she became pregnant in March following, and was confined nine months and one day from the date of the last application.

That, in large doses, however, the good may be apparent and temporary only, is evidenced by a case which I shall record briefly.

Mrs. M., aged 31, four years married, and never pregnant, called upon me in October, 1896, with a fibroid extending nearly 2 inches above the umbilicus, the sound passing into the uterine canal to the extent of 6 inches. She was very much blanched, and the hæmorrhage had been increasing during the past year. This was obviously an ideal case for electrolysis. This patient had in all about thirty applications, extending over a period of fully two years, during which time the size of the tumour varied, the bleeding became materially reduced, and the patient's general condition greatly improved. Frequently as high a current as 200 milliampères was employed. The last application was made on 7th December, 1898, and the patient died suddenly from hæmorrhage fifteen days later. In this case it is reasonable to ask, was the fatal hæmorrhage caused or accelerated by the caustic effect of the large doses of the current? I suspect this to be a real danger, apart from the probable danger of the presence of copious electrolytic *débris* in the cavity of the uterus, resulting from frequent applications of such doses of the current. I have also known dangerous exhaustion accompany or immediately follow the application of the current, although half an hour's rest afterwards will sometimes render the patient brisk and light of foot. We have thus material for an explanation of the diversity of opinion amongst those who have experience of this mode of treatment. My own varied results led me, some years ago, to use the primary faradic current in cases of fibroids. Since beginning the use of this current, I have rarely returned to the employment of electrolysis.

But there are other reasons for the diversity of opinion referred to. In the first place, errors of diagnosis occurred to me. I read with great care a case detailed by the late Dr. Thomas Keith, who was well known as an advocate of electrolysis. The case was one of hæmorrhage, with an enlargement of the uterus, and was diagnosed as a case of fibroid. The result of the electrolytic treatment was that the bleeding ceased, and the uterus returned to its normal dimensions. The case was recorded as one of fibroid tumour cured by electrolysis. I had no difficulty, however, in coming to the conclusion that, though Dr. Keith considered it a case of myoma, his enthusiasm had led him astray; for the tumour was, in all probability, a subinvoluted uterus, and the satisfactory result, I doubt not, was due to the treatment by electricity.

Errors of diagnosis are not uncommon even among good diagnosticians and able surgeons. A case in point occurs to me. The woman was seen by me in consultation in the country a few months ago. I diagnosed a pregnancy, with probably a fibroid, and sent her into the Samaritan Hospital. There had been intense sickness and general distress. Dr. Nairne agreed as to the probability of a tumour, and operated, only to find that no tumour was present. If Dr. Keith and Dr. Nairne may err in diagnosis, who is free from this risk?

Another cause of diversity of opinion, it seems to me, lies in the fact that good gynæcologists are, at least at first, not necessarily, rarely I should say, good electricians. They will, therefore, vary in their knowledge of electric science; and their very greatness as gynæcologists may induce them to attach less importance to electro-therapeutic experience; and so, misunderstanding the laws of electro-therapeutics, the result of their electric treatment will, no doubt, be often a matter of chance. I suspect that some bad results have arisen from want of care and want of attention to asepsis, operators not appreciating the importance of this, especially where large doses are employed. Perhaps, also, dash is more in their way than patience, which is essential to success in electric treatment.

Seeing, then, that electricity, in some form, may benefit or endanger in cases of myomata, how may it be employed so as to ensure the former and prevent the latter? Electricity may, undoubtedly, be used as a sedative, an astringent, an antiseptic, a caustic, or a promoter of the absorption of metabolic *débris* and of chronic inflammatory products. I state this as a result of personal experience extending over a period of many years. When is it of use, and how is it to be applied in disease of the uterus due to, or associated with, fibroids? Note that I use the word electricity not electrolysis; and it is on the former of these that I have been asked to speak. Now, it is not, as a rule, the tumour which we are asked to treat, but the discomfort or danger accompanying the tumour. It may be merely pressure symptoms, inflammatory affections of the ovary or broad ligament, metritis, salpingitis, or any other pelvic affection. It must be admitted that if these can be removed, not even a surgeon with a desire for operating will insist that operation is necessary.

I shall sum up briefly my opinion as to some of the uses of electricity in the treatment of these conditions.

If painful inflammatory products, or pain from extra-uterine cause be present, then the secondary faradic current is indicated, at first in small doses and with fine current, then in gradually increasing doses, and with a current less and less fine, that is with fewer windings in the coil.

If inflammatory products, and little or no pain, and no bleeding, then the negative pole of the galvanic current will be the proper application.

If free from inflammatory products, but bleeding be present, probably so-called electrolysis of moderate strength—under 100 milliampères—will be suitable, although I am finding, as I have indicated, the primary faradic current of service in these cases.

If the bleeding does not yield readily to moderate currents, then probably curettage will be best, after full dilatation for exploration as to seat of any fungoid endometritis, preliminary to renewal of electricity. Less decomposable *débris* will then result from the electrolysis, and the action of the current on parts of the endometrium not requiring it will thus be avoided.

Each case probably requires its own kind of electric treatment, just as each case suitable for the surgeon requires its own kind of surgical treatment.

I feel that almost no case should be treated surgically without first having been given a fair trial by electricity. I am not prepared to say with assurance that the faradic current can reduce the size of the tumour; but my experience of it warrants me in hoping that this may turn out to be the case. If my confidence in this current be confirmed by subsequent experience of it, time will still be required to ascertain what should be the dose, the voltage, the nature of the vibrations, number of windings, &c., and how these should be altered to suit individual cases, and changed as the conditions change. This treatment is at anyrate absolutely safe, or should be so.

Surgeons have blamed electricians for injury, rendering the necessary operation more difficult and dangerous; but this is less serious than a failure on the part of the surgeon would be, for a skilful surgeon may repair the damage done by an electrician; but, though electricity can do much good, no amount of skill on the part of the electrician will enable him to undo the work of the surgeon in any of these cases which go to swell the grim 5 to 10 per cent of failures.

Dr. J. K. Kelly said that as usual Dr. Edgar had displayed his liking for minute classification in expounding the various methods followed in the treatment of myoma, but for this Society such minute classification was rather elementary. Expectant and medical treatment were not in any way opposed to surgical treatment, but were merely the plan that any man of commonsense would adopt when a tumour was present which gave rise to no trouble. The real opposition lay between surgical treatment and Apostoli's method. Dr. Kelly, like others, had tried this method ten or twelve years ago, but had no satisfactory results. He considered that when electricity could be employed successfully for the removal of a tumour on the surface of the body, it would then be time to try it again for uterine myoma. It had continued in vogue because the uterus was the organ on which all sorts of experiments could be tried, and all with some apparent success.

Dr. Kelly considered that the only proper treatment for myoma that required treatment at all was surgical treatment, and this treatment should follow the laws of surgery, such as prevailed in all other regions of the body. The ideal that should be aimed at was the removal of the tumour with the retention of the organ. It was always so far a surgical failure to have to remove the uterus along with the tumour.

If the tumour were presenting in the vagina, it ought to be removed by the vagina, and large tumours could be removed *per vaginam* by morcellement. In one case of sloughing myoma, which weighed about 3½ lb., he was able to remove the whole by morcellement without any mutilation of the uterus. The tumour presenting in the vagina, however, need not be sloughing. Its very presence in the cervix, which was a region accessible to pathogenic organisms, made an abdominal operation unsuitable. In all other cases, however, when the cervix was not opened up by the tumour, and the tumour, therefore, was presumably in aseptic surroundings, abdominal section was the proper operation to perform. This gave free access to all parts, and even submucous tumours could be safely removed. In the last operation of enucleation he had performed—the tumours obtained being among those shown on the table—the largest of the tumours was submucous, and the cavity of the corpus uteri was freely opened. A great many myomata might be enucleated and yet leave the uterus a serviceable organ. In one of the specimens shown, eight or nine tumours had been removed from the uterine wall, and yet the uterus was left. In Howard Kelly's book, also, a case was illustrated in which several tumours had been removed, and a fairly normal uterus left. No doubt such an operation took more time than a hysterectomy, but it was the proper operation to perform wherever possible

Dr. Kelly referred briefly to three noteworthy cases of enucleation which he had recently. One was the case of a young woman who was proposing to be married, but had a large tumour which had long caused hæmorrhage, and was now beginning to cause impaction in the pelvis, so that from its rapid growth her medical attendant believed it to be a sarcoma rather than a myoma. This patient has now a perfectly healthy uterus, is married, and there is no reason why pregnancy should not occur. The second case was a most remarkable one. The patient was a young, recently married woman, who had been thought to be pregnant, but was suffering from constant and severe hæmorrhage. There was a large myoma chiefly occupying the fundus, and in view of the dangers of pregnancy, she was advised to have the tumour enucleated. At the operation, the abdomen was found full of dark blood, and after removal of the tumour and suture of the uterine wall, the cause of the bleeding was sought for and found in a ruptured tubal pregnancy of the left side—the rupture having taken place on her admission to the home two days before operation, the symptoms being at the time misinterpreted. In this case, also, there is every reason to hope that she may now have a normal pregnancy. In the third case, an abortion had taken place as the result of the presence of the tumour in a recently married young woman. After recovery from the abortion, which had become septic, the tumour was enucleated from the uterine wall, and the patient is now perfectly well.

Dr. Kelly concluded by saying that, with the observance of the ordinary surgical rules with regard to asepsis and the control of hæmorrhage, there should be no danger in treating myoma surgically, and by again insisting that the ideal operation was the excision or enucleation of the tumour with retention of the uterus.

Dr. W. L. Reid said that he agreed very much with what Dr. Edgar and Mr. Parry had stated with regard to the treatment of uterine fibroids. In many cases no treatment whatever should be employed, there being no symptoms.

In those in which menorrhagia was a symptom, he believed that good often resulted from giving ergot freely and regularly during the intervals, and bromides immediately before and during the period.

As regards electrical treatment, his experience seemed to have taught him that it did no good except when used in such a way as to cauterise the mucous membrane of the uterine cavity, and that this was only, as a rule, temporary in its good effect.

In the same way, the use of the curette often does good temporarily, and near the menopause, or when no more effective means can be employed, it is justifiable. He was astonished that the removal of the ovaries and tubes for bleeding fibroids had gone out of fashion. It had given very good results in his hands, but he believed that success depended on the complete removal of both ovaries and both tubes, and in certain cases of large tumour, or where there were many adhesions from pelvic peritonitis, this was often much more dangerous than an ordinary hysterectomy, which should in these circumstances be the operation chosen.

REVIEWS.

The Life of Pasteur. By RENÉ VALLERY-RADOT. Translated from the French by MRS. R. L. DEVONSHIRE. Two Volumes. Westminster: Archibald Constable & Co., Limited. 1902.

PASTEUR was surely one of the greatest of scientists, one of the most diligent and unselfish of workers, one of the greatest benefactors of his race. Some of the best biographies of men of action inspire the reader with the feeling that if he will simply do the plain duties that come in his way with the same faithfulness, he may accomplish something worthy of comparison with the achievements of the man he reads about. Pasteur, however, seems to be on a different plane altogether, and the contemplation of his life recalls the heroine's lament: "It were all one that I should love a bright particular star and think to wed it—he is so above me." By preparing the way for Lister with his antiseptic system, Pasteur laid humanity under an incalculable debt of gratitude; but he conferred on his fellows a whole series of benefits, any one of which might have seemed to an ordinary man sufficient for a life-work. Pasteur enunciated three great principles—(1) That each fermentation is due to the activity of a special microbe; (2) that each of the infectious diseases he had studied is due to a special microbe; and (3) that the microbe of an infectious disease, cultivated under certain conditions, has its pathogenic activity attenuated, so that from being a virus it becomes a vaccine. The first principle was applied in rules for the successful manufacture of beer and vinegar, and for preventing the deterioration of beer and wine on keeping. The second principle enabled him to preserve cattle from splenic fever contamination, and silkworms from their special disease, so that his countrymen were saved from enormous pecuniary losses; while the same teaching gave Lister the clue to the means of preventing pyæmia and other scourges of the surgical wards. The third principle indicated a method for the preservation of horses, cattle, and sheep from anthrax, of swine from swine erysipelas, of poultry from chicken cholera, and of humanity from hydrophobia and diphtheria.

Pasteur was an incarnation of humility, but when he was sure of his facts, he would stick to them with the utmost confidence and tenacity against all opposition, and he had great opposition to contend against. But every scientific worker and truth-seeker should read this life for himself. The intimate acquaintance with the details of Pasteur's work, the affectionate appreciation of the subject, and the admirable self-effacement of the biographer, are worthy of all commendation, and the parts undertaken by the translator and the publisher are alike excellent.

On Disorders of Assimilation, Digestion, &c. By Sir LAUDER BRUNTON, M.D., D.Sc., LL.D. Edin. and Aberd., F.R.S., F.R.C.P. London: Macmillan & Co., Limited. 1901.

SIR LAUDER BRUNTON possesses to a degree that characterises but few writers of our day the power of presenting the dry facts of medicine in a fascinating garb. You open one of his books, and are pretty sure to have your attention at once arrested by something—an explanation, an illustration, a story, or a mere expression of opinion, nicely put. You are led on to what follows, perhaps to what precedes, and can scarcely stop. The interest is as great as in the case of a novel, with the advantage that you do not need to begin at the end or at the beginning, but with the same disadvantage as in the case of the best novels, namely, that you cannot be sure that you will stop when the time for some other duty comes round.

The present volume consists of a long series of papers and addresses which have been published from time to time during a period of more than a quarter of a century (January, 1874, to May, 1901). As the circumstances under which they first appeared varied, there is naturally a good deal of repetition, and the author can plead in excuse that some of the ideas thus expressed over and over again have appeared to him to require emphasising. As the papers are reproductions, a considerable part of them will be familiar to many readers. The first article is Sir Lauder Brunton's address at the International Medical Congress at Moscow. The second and one or two later papers are on the presence of a glycolytic ferment in muscle. Then follow papers on diabetes, on stimulants and narcotics, on various digestive disturbances, on the use of atropine in cholera, on the treatment of headache, on certain diseases of the liver, and on other important subjects. The volume has our hearty welcome.

Tumours, Innocent and Malignant: Their Clinical Features and Appropriate Treatment. By J. Bland-Sutton. New Edition. London: Cassell & Co., Limited. 1901.

A feature of this book is the decided way in which the author expresses his opinions. This is as it should be, and forms a marked contrast to the indeterminate lucubrations to which the medical reader is treated in so many of the present-day publications. As a result, and as is only to be expected, food for debate is freely furnished. Space forbids us to enter fully into particulars, and we shall leave individual readers to compare the author's experience with their own; suffice it to point out that funicular hydrocele sometimes extends *into* the inguinal canal (p. 513). Again, the author states that this hydrocele "possesses very characteristic features," the reader's knowledge of which he infers. The treatment recommended for hydroceles is quite up to date and unnecessarily radical, while that of spina bifida (p. 557) does not appeal to us on the score of either modernity or safety.

The style is attractive, and the illustrations, while perhaps lacking the finished appearance which American authors have accustomed us to, are excellent, and form suitable companions to the text.

Here and there are evidences of insufficient revisal, *e.g.*, in the preface, where we are gravely told that, while the causes of cancer and sarcoma are unknown, those of "the so-called benign tumours are more mysterious." What can be more mysterious than the unknown?

The first edition of this work appeared nearly eight years ago. We have waited a surprisingly long time for the successor; and we can say unhesitatingly that it is worth waiting for. It requires no further recommendation, but will stand, and stand high, on its own merits.

The Microscopy of the Starches. By HUGH GALT, M.B., C.M., D.P.H.Camb. London: Baillière, Tindall & Cox. 1900.

ALTHOUGH this monograph does not extend to more than one hundred pages in length, it embodies much careful work on a subject which is of not a little importance. The aim of the author appears to have been to put to the test of microscope and camera those descriptions of various starches which have from time to time been given, and the typical character of the figures by which these descriptions were accompanied.

Micro-photographic processes now render possible what hitherto could only be accomplished by microscope and camera lucida. The author has availed himself of those processes, and has succeeded in producing a series of micro-photographs of the different starches of general excellence, and which have been obtained under conditions which he details. Accompanying the print of each is a lucid description of the characteristic form and measurements of average grains of each variety. In a tabular form, at the end of the book, is a condensed summary of the characteristics of the different starch grains, which will prove useful to the student of public health, as well as to those in commerce whose duty it is to deal with farinaceous food stuffs.

We congratulate the author on the production of a well-written and useful book.

Essentials of Gynecology. By EDWIN B. CRAGIN, M.D. Fifth Edition. Thoroughly Revised by FRANK S. MATHEWS, M.D. London: Henry Kimpton. 1901.

WE can thoroughly recommend this book to those who have already studied one of the larger text-books, and who wish to revise their work before going up for examination. Nothing of importance has been omitted, and the facts are clearly put, and the methods are up to date. The illustrations, of which there are fifty-seven, are excellent.

A Short Manual for Monthly Nurses. By CHARLES J. CULLINGWORTH, M.D., F.R.C.P. Fifth Edition. London: J. & A. Churchill. 1901.

THIS little work has now reached its fifth edition, and that in itself proves that it has supplied a want. This edition has been revised by the author, with the assistance of the matron of the General Lying-in Hospital, London, and is thoroughly up to date. Though sufficient for nurses who have had a general training, and who only wish to know the special duties of a monthly nurse, it is too brief for those who have not already had such a training, and is altogether unsuitable for those who wish to become midwives.

A Manual of Bacteriology. By HERBERT WILLIAMS, M.D. London: Rebman, Limited. 1901.

THIS *Manual,* which claims to be nothing more than a compilation, is elementary in character. The purpose of the writer is to give, in a condensed form, facts which every medical man should know, and it may at once be granted that the writer has succeeded in his purpose. The already overtaxed medical student will find here all that is required for a correct understanding of most of the other branches of medicine, provided that he has, in addition, mastered the principles of the science by laboratory work. The writer seems to hold the same opinion, for while he takes 186 pages to describe the *technique*, the description of the pathogenic germs occupies only about 80 pages. The descriptions are accurate, the book is well printed, and the illustrations (89 in number) are good. We can confidently recommend this work to all who desire to know only the elements of the science.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

SURGERY.

BY G. H. EDINGTON, M.D., AND JOHN PATRICK, M.A., M.B.

On the Treatment of Sciatica.—Fritz Hölscher (*Centralblatt für Chirurgie*, No. 2, 11th January, 1902) has for ten years been dealing with obstinate cases of sciatica which have resisted all medicinal, hydropathic, and mechanical treatment, even that of stretching the sciatic nerve by a method of applying carbolic acid solution directly to the nerve. The usual incision between the tuber ischii and the trochanter major, as for stretching of the nerve, is made; the nerve is thoroughly cleared of connective tissue for 6 cm. of its length, and against this is placed a gauze tampon soaked in 5 per cent carbolic acid solution. The tampon is removed three days later through a gap in the wound left for the purpose, and the wound is allowed to heal by granulation. There is immediate relief from the pain, but after some hours some dulness of sensation is felt in the calf, and for two days there is a burning pain in the wound itself. Thereafter pain is abolished. Interference with sensation and movement has never been observed.

Hölscher has never seen any macroscopic changes in the nerve itself, but the sheath has usually been markedly hyperæmic. He has observed between the muscles in the sciatic notch, connective tissue bands which, in the movements of the leg, must have compressed the nerve against the bone. These adhesions were loosened with the finger.

It is contended for this method that the good results are lasting—out of 15 cases only 2 recurred, respectively two and three years after operation; that there is no risk of injury to the spinal cord; and that the whole sciatic plexus is affected by the carbolic acid solution.

Symptoms of general carbolic acid poisoning and degenerative changes in the muscles and nerves have never been observed by Hölscher to take place after this operation.—J. P.

Artificial Pneumothorax as a Preliminary Operation to the removal of Tumours penetrating the Chest Wall or Tumours of the Lung.—Julius Dollinger (*Centralblatt für Chirurgie*, No. 3, 18th January, 1902) recalls that at the last Surgical Congress Dr. Delagénière had declared that pneumothorax occurring in the course of an operation on the chest wall is a serious accident only when it happens suddenly. In February, 1899, Dollinger had a patient with a sarcoma, about the size of a man's fist, situated on the sixth, seventh, and eighth ribs on the right side, in the removal of which the pleural cavity must of necessity be opened. As a preliminary operation, he made an incision 5 cm. long in the fifth interspace into the cavity and inserted a drainage-tube. This was done with a local anæsthetic. After the operation the respirations were 35 to 40 per minute, the pulse-rate 120; but the patient felt very comfortable, and was able to walk up and down the ward.

Next day, as the patient's general condition was excellent, he was put under chloroform, and the tumour of the ribs removed. The lung was collapsed, but still took part in respiratory movements. Each time that the blood which had flowed from the wound was wiped from the surface of the lung respiration stopped in deep inspiration for some seconds from irritation of the vagus; there was, however, no disturbance of the heart's movement, which could be plainly seen within the pericardium. After removal of the tumour the wound was closed, with drainage from the pleural cavity. The lung was not stitched to the parietal pleura; in two weeks it had expanded completely.

A second case of the same kind, similarly treated, some months later had an equally successful result.

Dollinger urges that the second stage of the operation—the removal of the tumour—should be done not less than one day later than the artificial pneumothorax. The patient takes the anæsthetic better than when the pneumothorax takes place suddenly during the operation.—J. P.

Unnoticed Fractures in Children.—F. J. Cotton and R. H. Vose contribute a paper with the above heading to a recent number of *The Boston Medical and Surgical Journal* (9th January, 1902). According to the authors, the overlooking of fractures is especially likely to happen in children, because the latter are less able to make exact complaints, and because many fractures in children are accompanied by disproportionately little pain or reaction, even when complete. They point out that a fracture may exist without deformity, and with fairly free use possible without any considerable pain; but that, while the result may be good, excessive callus formation usually follows neglect of fixation. Overlooking is not from any difficulty in diagnosing the condition, but because its relative frequency is not borne in mind, and, at the same time, one expects too much in the way of pain and disability. One, also, is apt to forget the relative frequency of subperiosteal fractures (complete or incomplete), with little or no displacement, and none of the "bowing" of the classical greenstick. *Signs*:—(1) *Painless*, or seemingly painless, *disability*; if, for instance, the clavicle be broken, the child cannot raise arm fully, but it may be raised passively without pain or spasm. The same disability is seen in limp when tibia is broken, and in loss of grasp in greenstick fracture of fore-arm. If passive movement be accompanied by pain, it is only in extreme flexion, extension, &c. (2) On palpation there is always a *localised tenderness*. (3) Sometimes *deformity* is appreciated with ease, and occasionally there is (4) unexpected *crepitus*. If days or weeks have passed, there may be (5) ring-like *callus* with local tenderness. "Where there is only local tenderness with a history of trauma, a diagnosis of probability is justified, and may be made with a good deal of confidence."

The authors give notes of 18 cases of fractures of various bones, viz.:—clavicle, 10; fore-arm, 2; ulna, 1; tibia (oblique, 3 inches above malleolus), 2; metatarsus, 3.

These cases show tendency among surgeons "to underestimate the tolerance of children to fractures."—G. H. E.

Diagnosis between Acute Appendicitis and some Atypical Cases of Typhoid Fever.—There is a strong possibility of mistaking a case of typhoid, beginning with severe abdominal pain, for acute appendicitis; while appendicitis, with pain and tenderness mild, but with severe constitutional symptoms, may be mistaken for typhoid. In making a diagnosis, not only single symptoms, but groups of symptoms must be weighed.

In acute abdominal lesions, considered surgically, four symptoms have special weight—*pain*, *tenderness*, *muscular rigidity*, and *fever*. "In various combinations, these indicate almost every acute surgical lesion, except, perhaps, simple hæmorrhage." The absence of any one of these four throws doubts on the condition being one of peritonitis, and therefore on every lesion in which peritonitis must be present. For example, if rigidity be absent, there may be appendicitis, but no peritonitis, hence lesion, if in appendix, must be intra-appendicular. Similarly, absence of tenderness or of pain shows absence of appendicitis. Absence of fever is not so important.

In *typhoid* there may be various combinations *e.g.*, *no rigidity*. This puts surgeon on his guard, and abdominal and thoracic organs must be examined, also the blood, to exclude typhoid.

If *pain absent* in a questionable case of acute abdominal disease, then appendicitis is ruled out; in fact, one may look on the combination as incompatible with acute abdominal disease, although it may occur in typhoid, the near approach of ulceration to peritoneal surface causing rigidity and tenderness.

The *absence of tenderness* in localised rigid area, the seat of pain, suggests disease of abdominal wall, distended intestine, or new growth, but *never* localised peritonitis.

When any of local signs absent, especially tenderness and rigidity, *fever strongly suggests typhoid*. "Without pain at some time, there can be no acute surgical lesion of abdomen; temperature with pain, but without rigidity or tenderness, means typhoid fever, or simple continued fever; very high temperature should excite suspicion if pain and tenderness are present but not marked, for acute appendicitis has usually a moderate temperature; a soft abdomen with a high temperature is a suspicious combination, even if there is pain and tenderness; when typhoid is suspected, the pain and tenderness must be distinctly localised in the appendix, and confirmed by rigidity, resistance, or tumour, before operation for appendicitis is justifiable. When there is doubt as to typhoid, the operation should be postponed if constitutional signs are severe and local ones hard of detection. When the abdominal symptoms—pain, tenderness, rigidity, with or without distension—call loudly for operation, the abdomen must be opened, in spite of the possibilities of typhoid; but cases suggesting typhoid as strongly as appendicitis should, until the diagnosis is perfectly clear, be carefully observed."—(Maurice H. Richardson, *Boston Medical and Surgical Journal*, 9th January, 1902.)—G. H. E.

Congenital Elevation of the Shoulder.—Goldthwait and Painter report two cases which occurred in children, and which were treated by operation.

The condition in the first case was due to imperfect development of muscles. The patient was a boy, aged 12, in whom elevation of the left shoulder was observed at the age of 1 year. There was no apparent cause, and while the deformity became more marked with the growth of the child, it gave rise to no disability.

Operation.—A vertical incision over the scapula was made, extending from the middle of the upper border down to the lower angle. The attachment of the trapezius to the spine of the scapula was divided, and the rhomboids exposed. The latter muscles, which were composed chiefly of fibrous tissue, were divided along with the levator anguli, and the shortened lower portion of the serratus magnus and the scapula were then brought down as far as possible. A bending forward of the upper part of the bone prevented it being placed in perfect position. The tendon of the trapezius was then attached to the spine higher up than normal, so as to depress the shoulder. The parts were put up with the outer part of the shoulder elevated, and the inner part depressed (by strap). Passive motion was commenced at the end of two weeks, and was followed by active exercises. Functionally, the limb is normal (seven weeks after operation), and the appearance of the boy has been much improved.

In the *second case* there was an abnormal osseous band connecting scapula and seventh cervical vertebra. The patient, a boy, aged 11, was healthy and active, but had been "stoop-shouldered" since early childhood, and this has increased with growth. The head was bent over to the right, and the cervical column was curved with convexity to left. There was marked facial asymmetry, as in torticollis. The only restriction of movement was seen in extreme elevation of the limb from the side. He was brought to the Boston Children's Hospital on account of rapid increase of the cervical deformity. On examination, the right arm was found to be somewhat smaller than the left; the scapula was also smaller (x-ray), the lower angle being at level of middle of vertebral border of the left bone. There was slight atrophy of supra- and infra-spinati, and the arm could not be abducted to more than a right angle. The lower angle projected, even with the arm at rest. The cervical column presented curve mentioned above, and the seventh spine was prominent. The upper angle of the scapula articulated with an osseous band, an inch and a quarter long, by three-quarters of an inch wide, by quarter of an inch thick, the upper extremity of which articulated with the transverse process of the seventh cervical vertebra. Removal of this band was followed by free movement of the scapula. Massage, exercises, and sling for head to correct spinal curvature, were followed by distinct improvement, but in the illustrations accompanying the paper the deformity is still marked.—*Boston Medical and Surgical Journal*, 26th December, 1901.)—G. H. E.

Anatomical Treatment of Fractures of Femoral Neck.—The method here detailed is that advocated and practised by Professor T. J. Maxwell thirty years ago, and, according to C. E. Ruth, "is the only method that entirely neutralizes the displacing tendencies of muscular action and weight."

Ruth, first of all, mentions the effects of muscular action in the displacement of these fractures. *Shortening* is produced by the long muscles (hamstrings, vertical portion of adductor magnus, sartorius, rectus, and gracilis). The adductors, pectineus, and glutei pull *inwards* and *upwards*; the obturators, gemelli, pyriformis, quadratus, and lower part of gluteus maximus pull *inwards* and *rotate outwards*; pulling *inwards* and *upwards* and *rotating inwards* are tensor fasciæ and anterior portions of gluteus medius and minimus. The psoas and iliacus, formerly internal rotators, are in these fractures *external rotators*, and may prevent approximation of the fragments.

Eversion is produced by external rotators, *plus* weight of limb. Posterior displacement and external rotation are limited by the Y-ligament only.

Treatment.—Adjust by flexing the thigh on the abdomen to right angles; this relaxes psoas and iliacus, and brings these muscles clear of fracture-line. Make vertical traction on shaft of femur, then lay in normal line and apply extension (20 lb.) in axis of body, *plus* traction outwards, upwards, and forwards, with lateral weight and pulley (5 to 15 lb.) The bed must be raised both at foot and at side.

Results.—In a former paper, based on 17 cases, 5 recovered with no discoverable shortening, 7 showed half an inch to three-quarters of an inch, 3 presented shortening of one inch, and 2 were left with useless limbs (treatment not followed out). Eight additional cases are now reported, of which 3 had shortening of half an inch, and 3 with no appreciable shortening. One case had already the other limb useless from fracture; second limb showed seven-eighths after recovery; another case had useful limb after previous fracture (half-inch shortening), fracture of second limb followed by one inch shortening. From the above it will be seen that the usual result was a useful limb.—(*Journal of American Medical Association*, 21st December, 1901.) G. H. E.

GYNÆCOLOGY AND OBSTETRICS.

By E. H. LAWRENCE OLIPHANT, M.D.

Puerperal Eclampsia, with Special Reference to the Use of Saline Transfusion.—Dr. E. W. Hay Groves reports two cases (*Transactions of the London Obstetrical Society*, 1901, part ii). After referring to methods of treatment in vogue, from empirical blood-letting to Porro's abdominal extirpation of the uterus, with a maternal mortality of nearly 30 per cent and an infantile of 50 per cent, he describes two cases treated by saline transfusion. The first patient was apparently moribund, in spite of morphia and diaphoresis with pilocarpin. The child had been born, and the fits increased in frequency and intensity. One hundred ounces of saline solution at 100° F. were allowed to flow under low pressure into the right median basilic vein. This occupied forty minutes, partly because a fine cannula was used and low pressure was employed, and partly because the blood clotted with such extreme rapidity in the cannula when introduced into the vein first, that the cannula had to be removed and reinserted lest a clot should have been driven into the circulation. The effect of the transfusion was immediate, as indicated by lessened cyanosis and coma. The frequency and violence of the fits lessened immediately, so that three hours elapsed without a single convulsion, and then there were merely two slight fits and no more. There was no marked rise in the urinary secretion until twenty-four hours after the transfusion.

Case II was somewhat similar, but the convulsions came on before delivery. The transfusion was again made into the right median basilic vein, and again there was great trouble with the clotting of the blood. The transfusion of 70 oz. occupied three quarters of an hour. In this case nothing like diuresis occurred for forty-eight hours. The patient was maniacal for some time after the coma passed off. She made a good recovery after being threatened with recurrence of the symptoms after eating a quantity of meat. The author proceeds to summarise published cases. Nearly half of these (22) are recorded by Dr. Jardine, of Glasgow, who had a mortality of 22 per cent. The author defends Dr. Jardine against the criticism of the *British Medical Journal*, drawing special attention to the higher mortality of eclampsia occurring in women before the full term of pregnancy. If Dr. Jardine's cases had died in the proportion as given in Schauta's statistics—viz., 52·5 per cent—before labour, he would have lost more than twice as many as he did. We may note in passing that it is to these pages of this *Journal* that Dr. Jardine is indebted for introducing this method of treatment The author discusses the pathology at length, and sums up by saying that eclampsia is due to the toxic condition of the blood, which first increases its coagulability, and then causes it to form multiple thrombi in the various organs—chiefly the kidneys, liver, lungs, and brain; but, while all agree that the blood is toxic, all differ as to the nature of the toxin. All are agreed as to the value of milk diet as a prophylactic. The author suggests that the saline transfusion acts by diluting the blood, and so hindering the occurrence of the multiple thrombi, and possibly also by dissolving thrombi already formed. Thrombosis consists, in the first place, in the agglutination of blood platelets. It is only after the thrombus has existed some time that it becomes fibrinous. It therefore seems possible that platelet thrombi may be as quickly dispersed as formed. This would account for the immediate improvement in the patient's condition.

Most of the people who have used this method of treatment have ascribed its beneficial effect mainly to its diuretic action, but, as the author points out, the diuresis takes place hours after the disease has begun to abate, and, in his opinion, is a result, not a cause, of the abatement. The author finds support for his theory in a record of four cases of uræmia or convulsions occurring after gelatine injections.

In the discussion which followed, Dr. Spencer said he believed in morphia. He also in one case incised the œdematous legs and fomented the parts to eliminate the poison, and would be inclined to try the effect of incisions in other cases. Dr. Hermann quoted Veit, who had had 60 cases treated with morphia and two deaths only, while Charpentier had collected 239 cases treated by chloral, with a death rate of 4 per cent. Dr. Griffiths warned that, while the patient's safety is increased by delivery, the means used must be safe. Forced delivery, morphine, pilocarpine, and septicæmia claim many victims who ought to have survived if less heroic measures had been adopted. In nephritis complicated by pregnancy, the pregnancy must be terminated without delay. The method advocated by Dr. Groves is quite unnecessary, except in a few exceptional cases, but in these it would seem to be of value by keeping the patient alive until the kidneys and other organs are able to resume their work.

Dr. C. E. Jennings shewed an apparatus for infusion of saline fluid or blood without risk of clotting. He suggested the addition of liquor ammoniæ to the saline fluid in the proportion of 1 in 2,000, or 5 minims in 1 pint of fluid, which could be transfused within three minutes. Dr. Giles preferred the subcutaneous injection of fluid. Chloroform and rapid delivery were important adjuvants. Dr. Jardine described his methods, advocating large doses of Epsom salts introduced into the stomach by a tube; hot packing or vapour bath were always used. He advised not inducing labour unless the fits recurred frequently. Free incision of the cervix might be necessary. He claimed to have reduced the mortality of the Maternity Hospital in Glasgow from 47 to 24. Dr. Munro Kerr called attention to the harsh criticism of Dr. Groves' paper by speakers who had no experience of the treatment. Delay in the establishment of diuresis was, in his opinion, due to the free purgation. Dr. Routh did not think that the embolic theory was proved. Dr. Dawson protested against teachers maintaining that saline transfusion should not be used by general practitioners. Dr. Horrocks, the president, did not think the saline transfusion was a remedy. In some cases, diaphoresis with pilocarpine induced a sudden change for the better. If much salivation was induced, the patient must be turned face downwards. If the pulse were full, direct transfusion into a vein might prove dangerous; injection subcutaneously would be safer. He thought the treatment worthy of further trial.

Dr. Groves replied, and pointed out that other practitioners had failed to get the beneficial results of Veit or Charpentier with sedatives alone. He summarised the treatment of eclampsia as follows:—In cases where there is incessant restlessness and excitement between the fits, morphia and chloral are indicated. In cases with profound coma, cyanosis, stertorous breathing, and anuria, saline transfusions in large bulk, repeated, if necessary, every six hours. During delivery, chloroform. General method, as purgation and hot packs, are useful in all cases.

BACTERIOLOGY.

Pseudo-membranous Inflammation of the Mucous Membranes caused by Fraenkel's Pneumococcus.—Drs. Cary and Lyon report the following interesting and remarkable case, occurring during the course of an acute lobar pneumonia in a boy, 11 years of age, of a pseudo-membranous exudation upon nearly all the mucous surfaces of the body open to inspection, due to a pneumococcic infection.

The primary symptoms were those of sore throat, the patient being subject to attacks of tonsillitis. There was involvement of the left base, indicated by consolidation, followed in four days by extension to the base of the right lung. An abundant white exudate covered both tonsils, which, when removed, was flaky, and left a raw, bleeding surface. A portion of this membranous material was submitted to bacteriological examination to determine the presence or absence of bacillus diphtheriæ, with a negative result. Turpentine and oil (1 in 6) were applied to the chest. This produced an abundant herpetic eruption over the area on which the liniment was rubbed.

The eruption appeared on the lips, and the exudation became more abundant in the mouth and throat, and the eyes were now the seat of a commencing conjunctivitis. The conjunctivitis was well marked the next day. Subconjunctival hæmorrhages were present; the lids were swollen and adherent; photophobia was complained of. The mucous membranes of the glans penis, anus, and nose were now involved and covered by a fibrinous exudate, evidently by direct transplantation of the infection by the patient himself—great difficulty had been experienced in keeping him from picking the affected surfaces, and his fingers were constantly blood-stained from too frequent visits to his nose and lips.

A portion of the exudate from each of these surfaces was submitted to bacteriological examination; in some cases the pneumococcus of Fraenkel was found alone and in pure culture, in others, especially from the mouth, there was contamination with staphylococcus pyogenes aureus; but in all the cultivations so made the pneumococcus was present in very great abundance. Completing a very interesting article, there is an extensive bibliography.—(*American Journal of the Medical Sciences*, September, 1901.)—J. A. C.

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Selected Essays and Monographs, chiefly from English Sources (Braxton Hicks—Bodington—Hodgkin—Paget—Humphry—Ehlers), with Obituary Notice of the Society's late Treasurer, Dr. Sedgwick Saunders. London: The New Sydenham Society. 1901.

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GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FIVE WEEKS ENDING 22ND FEBRUARY, 1902.

	WEEK ENDING				
	Jan. 25.	Feb. 1.	Feb. 8.	Feb. 15.	Feb. 22.
Mean temperature, . .	44·4°	28·5°	35·9°	34·8°	37·0°
Mean range of temperature between day and night, .	9·6°	13·1°	7·5°	7·3°	7·7°
Number of days on which rain fell, ...	7	0	3	0	2
Amount of rainfall, . ins.	1·04	0·0	0·08	0·0	0·03
Deaths registered, . . .	329	340	357	376	386
Death-rates, ...	22·1	23·2	23·9	25·2	25·9
Zymotic death-rates, . .	3·6	2·7	3·2	2·2	3·1
Pulmonary death-rates, .	5·7	7·8	7·8	10·6	10·4
DEATHS—					
Under 1 year, . . .	55	64	78	60	73
60 years and upwards, .	73	79	78	104	89
DEATHS FROM—					
Small-pox, ...	...	1	1	2	6
Measles, ...	23	16	16	8	7
Scarlet fever, . . .	1	5	5	1	1
Diphtheria, . . .	1	2	4	2	1
Whooping-cough, . .	10	12	10	10	15
Fever, ...	3	2	2	5	4
Diarrhœa, ...	13	2	9	5	12
Croup and laryngitis, .	...	1	2	1	1
Bronchitis, pneumonia, and pleurisy, ...	63	78	90	128	121
CASES REPORTED—					
Small-pox, ...	16	13	6	105	41
Diphtheria and membranous croup, ...	5	12	10	13	13
Erysipelas, . . .	49	31	30	20	29
Scarlet fever, . . .	52	54	47	47	59
Typhus fever, ...	...	...	...	...	1
Enteric fever, ...	19	15	21	13	18
Continued fever, . .	...	...	...	...	...
Puerperal fever, . .	2	1	...	1	2
Measles,*	402	338	205	131	150

* Measles is not notifiable.

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THE ANTITOXIN TREATMENT OF DIPHTHERIA IN THE CITY OF GLASGOW FEVER HOSPITAL, BELVIDERE, DURING SIX AND A HALF YEARS.

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The use of antitoxin in the treatment of diphtheria has now been on its trial in this country for nearly seven years, and has been the chief method of treatment employed in this hospital since the beginning of 1895. A short *résumé* of the results attained will, therefore, be not without use, especially as no general synopsis of these results beyond the issue of the hospital statistics year by year has been published since Dr. Marsh's paper in 1896.

The collective results are shown in Table I. This table consists of four divisions—the first showing the mortalities at different age-periods in the pre-antitoxin days, the second those in the last six and a half years, of all the cases treated in Belvidere. For the purposes of comparison the corresponding figures taken from the reports of the Metropolitan Asylums' Board, London, are also given. From the figures in these parallel columns the value of the remedy can easily be gauged, unless some other factor than antitoxin has been in progress at the same time. The mortality at all ages has been greatly lowered.[1] It is to be noticed that the improvement becomes more marked as the age-period increases from 1 to 10. Thus, the death-rates at the age of 1 in the two periods are respectively 70·6 per cent and 46·2 per cent—an improvement of 34 per cent; the death-rates of the two periods for the ages 5 to 10 are respectively 39·9 per cent and 9·7 per cent—an improvement of 75 per cent. This difference is the more noteworthy as showing that the saving of life has not been so much among the very young as among those of 2 years old and upwards. The high death-rate at the ages of 10 years and upwards merits some remark. It may be in part due to

TABLE I.—SHOWING THE TOTAL NUMBER OF CASES ADMITTED TO THE CITY OF GLASGOW FEVER HOSPITAL, BELVIDERE, 1871-31ST MAY, 1901, IN TWO GROUPS—1ST, 1871-1894 (PRE-ANTITOXIN PERIOD), AND 2ND, 1895-1901 (ANTITOXIN PERIOD), WITH THE CORRESPONDING STATISTICS FOR THE METROPOLITAN ASYLUMS' BOARD HOSPITALS, LONDON, IN TWO GROUPS—1890-1894 (PRE-ANTITOXIN PERIOD), AND 1898-1899 (ANTITOXIN PERIOD).

	GLASGOW.						LONDON.					
	Pre-Antitoxin Period (1871-94).			Antitoxin Period (1st Jan., 1895, to 31st May, 1901).			Pre-Antitoxin Period (1890-94).			Antitoxin Period (1895-99).		
Ages.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality
-1	17	12	70·6	67	31	46·2	179	116	64·8	510	193	37·8
1-2	91	61	67·0	183	71	38·8	641	396	61·7	1719	610	35·5
2-3	85	51	60·0	175	41	23·4	896	489	54·5	2582	684	26·4
3-4	106	49	46·2	184	25	13·6	1163	546	46·9	3486	801	22·9
4-5	82	38	46·3	135	20	14·8	1222	479	39·2	3666	759	20·7
5-10	233	93	39·9	308	30	9·7	3461	946	27·3	10578	1584	14·9
10-20	93	9	9·6	86	9	10·4	1959	151	7·7	4681	248	5·3
20-30	66	6	9·0	59	3	5·1	844	38	4·5	1154	21	1·8
30-	17	...	...	31	5	16·1	412	35	8·5	659	28	4·2
Total.	790	319	40·4	1228	235	19·1	10777	3196	29·6	29035	4928	16·9

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[1] This decline in the mortality had not begun before the introduction of antitoxin, the mortality for 1893 and 1894 at each age-period being—83·3 per cent under 1 year, 64 per cent at 1-2 years, 60 per cent at 2-3 years, 47·7 per cent at 3-4 years, 37·5 per cent at 4-5 years, 33·9 per cent at 5-10 years, and above that age 6 per cent.

the smallness of the numbers, but in large measure it is to be explained by the fact, which an examination of the case records made quite clear, that at least one-third of persons dying at the higher ages were admitted in a moribund condition. It would seem that the hospital did not receive anything like a fair average of the disease at the higher ages such as seems to be the case with the hospitals in London. The comparative figures for London given in the third section of the table are interesting as showing that the Glasgow mortality compares very favourably with that in the south on the whole. It will be seen that the number of cases at different ages is very different. If a thousand cases be taken at the ages at which they occur in the above table, they will be distributed in the two localities in the manner shown in the annexed table.

TABLE II.—RELATIVE PROPORTION IN 1,000 CASES AT DIFFERENT AGES OF THE CASES OF DIPHTHERIA TREATED IN GLASGOW AND LONDON, WITH THE APPLICATION OF THE GLASGOW DEATH-RATES TO THE LONDON AGE-INCIDENCE OF CASES.

GLASGOW.			LONDON.	
Ages.	Number with Ages of 1,000 Cases.	Death-rate.	Number with Ages of 1,000 Cases.	Proportion of Deaths at the Glasgow Death-rates.
-1	54·6	46·2	17·5	8·1
1-2	149·3	38·2	59·2	22·6
2-3	142·8	22·8	88·9	20·3
3-4	149·4	13·6	120·0	16·3
4-5	108·5	15·0	126·2	18·9
5-10	251·4	9·7	364·3	35·3
10-20	70·2	10·4	161·2	16·7
20-30	48·1	5·1	39·7	2·0
30-	25·3	16·1	22·6	3·6
		19·0		14·3*

* That is, the Glasgow death-rate corrected to the London figures is 14·3.

It will be seen from Table II that in Glasgow a much larger proportion of the cases occur at the early ages, and in consequence that although the crude death-rates shown in Table I are lower for London, yet that the corrected rate, allowing for difference of age-incidence, is rather in our favour, being 14·3 per cent as against 16·9 per cent, even although the fatality is so high in Glasgow at ages above 10, and the number of cases at 10 to 20 is less than half that of London.

In order that fuller detail of the difference may be easily seen, the following table (Table III) is annexed, in which the percentage mortalities at each age-period are given in parallel columns for both London and Glasgow since the commencement of the treatment of diphtheria by antitoxin.

TABLE III.—COMPARATIVE TABLE OF THE PERCENTAGE MORTALITY FROM DIPHTHERIA AT DIFFERENT AGE-PERIODS IN THE METROPOLITAN ASYLUMS BOARD'S HOSPITALS, LONDON, AND IN THE CITY OF GLASGOW FEVER HOSPITAL, BELVIDERE, 1895-1900.

Ages.	Glas. 1st Jan., 1895, to 31st May, 1896.	Lond. 1895.	Glas. 189c-97.	Lond. 1896.	Glas. 1807-98.	Lond. 1897.	Glas. 1898-99.	Lond. 1808.	Glas. 1899-00.	Lond. 1899.
-1	40·0	38·7	58·3	52·0	60·0	32·3	58·3	33·0	37·5	37·4
1-2	31·2	46·6	33·3	46·2	48·4	31·8	47·0	32·3	29·4	29·6
2-3	12·8	33·1	30·0	31·2	35·7	26·9	28·5	26·1	26·6	21·3
3-4	16·6	30·2	19·2	25·6	14·8	22·8	10·7	20·5	7·8	20·1
4-5	12·5	29·4	8·6	25·2	11·7	20·7	33·3	19·1	10·0	15·5
5-10	6·2	19·5	13·0	18·7	5·8	16·4	10·7	12·7	14·2	11·8
10-15	7·7	8·5	...	8·4	16·6	4·7	9·0	5·1	...	5·3
15-20	10·0	7·3	40·0	5·8	22·2	2·4	...	1·8	...	1·6
20-25	12·5	1·3	...	1·9	25·0	4·2	...	1·2	12 5	·9
25-30	...	3·1	...	1·2	...	3·2	...	...	...	1·4
30-	16·6	2·2	28·3	2·3	...	10·1	14·3	3·4	20·0	2·8

The great difficulty in obtaining uniformly good results in the treatment of diphtheria is to be found in the rapidity with which progress of the disease lessens the chance of successful treatment. As an illustration of this Table IV is given. In this table the cases admitted last year are arranged in groups, according to the periods at which they came under treatment, and the corresponding death-rates given. Of those treated on the first day of illness all recovered, and those received on the

TABLE IV.—NUMBER OF CASES OF DIPHTHERIA ADMITTED ON EACH DAY OF ILLNESS, WITH THE CORRESPONDING MORTALITY.

Day of Disease.	Number of Cases.	Number of Deaths.	Percentage of Mortality.
First, ...	8	...	...
Second, ...	22	2	9·0
Third and fourth, . .	58	9	15·5
Fifth and upward, . .	96	19	19·8

second day, 2 out of 22, or 9 per cent died, while the further delay causes a corresponding increase in the mortality. Thus the paradox: that it is better for a child to become immediately ill, or to take what appears to be a severe attack of diphtheria and thus come at once under treatment, than to take an apparently milder attack, which, in the parents' mind, is not of sufficient gravity to demand the attention of a medical attendant till the illness has progressed for several days.

TABLE V.—SHOWING THE RESULTS OF THE SERUM TREATMENT OF DIPHTHERIA IN BELVIDERE, 1895-1901. CASES COMING TO THE HOSPITAL MORIBUND (*I.E.*, DYING WITHIN TWENTY-FOUR HOURS OF ADMISSION) ARE EXCLUDED FROM THIS TABLE AS BEING BEYOND TREATMENT ON ADMISSION.

Ages.	1895-1896.			1896-1897.			1897-1898.		
	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.
-1	13	4	30·7	11	6	54·5	10	6	60·0
1-2	25	5	20·0	22	6	27·2	27	10	37·0
2-3	38	3	8·0	17	3	17·6	14	5	35·7
3-4	28	6	21·4	25	4	16·0	27	4	14·8
4-5	22	3	13·6	22	1	4·5	16	1	6·2
5-10	63	1	1·6	43	3	6·9	49	1	2·0
10-	41	2	4·8	26	1	3·8	22	4	18·1
Total,	230	24	10·4	166	24	14·4	165	31	18·7

Ages.	1898-1899.			1899-1900.			1900-1901.		
	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.
-1	6	1	16·6	13	3	23·0	6	...	...
1-2	30	12	40·0	30	6	20·0	22	7	31·8
2-3	27	7	25·9	37	7	18·9	32	5	15·6
3-4	28	3	10·7	37	2	5·4	31	1	3·2
4-5	21	5	23·8	30	3	10·0	16	1	6·2
5-10	56	6	10·7	47	5	10·6	41	3	7·3
10-	31	2	6·4	27	2	7·4	24	1	4·1
Total,	199	36	18·0	221	28	12·6	172	18	10·4

Of all the cases received, a considerable proportion are, on admission, beyond the reach of treatment. This number varies in different years; in all, it has amounted to 73 in the period of six and a half years. If a child dies within twenty-four hours of admission, it may be fairly said to be beyond medical

TABLE VI.—LARYNGEAL CASES OF DIPHTHERIA: PRE-ANTITOXIN AND ANTITOXIN PERIODS.

Ages.	1871-1894.			1895-1896.			1896-1897.			1897-1898.		
	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.
-1	6	6	100·0	6	4	66·6	6	4	66·6	6	4	66·6
1-2	61	49	80·3	23	10	43·4	15	4	26·6	21	10	47·6
2-3	51	41	80·3	28	6	21·4	16	5	31·2	11	3	27·2
3-4	56	37	66·0	17	5	29·4	11	3	27·2	17	4	23·5
4-5	49	30	61·2	18	4	22·2	15	...	...	6	2	33·3
5-10	82	58	70·7	21	2	9·5	22	4	18·2	18	2	11·1
10-20	10	4	40·0	1	...	...	...	...	...	1	1	100·0
20-30	5	3	60·0	...	...	...	...	...	...	...	...	...
30-	1	...	...	1	...	...	...	...	...	...	...	...
Total,	321	228	71·0	115	31	26·9	85	20	23·5	80	26	32·5

Ages.	1898-1899.			1899-1900.			1900-1901.			Total—1895-1901.		
	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.
-1	7	6	85·7	11	4	36·3	3	...	...	39	22	56·4
1-2	23	11	47·8	24	6	25·0	16	7	43·7	122	48	39·3
2-3	21	5	23·8	34	6	17·6	20	4	20·0	130	29	22·3
3-4	14	3	21·4	24	1	4·1	22	4	18·1	105	20	19·0
4-5	11	2	18·1	16	...	...	10	2	20·0	76	10	13·1
5-10	31	4	12·9	19	4	21·0	13	1	7·6	124	17	13·7
10-20	...	...	...	...	...	...	...	...	...	2	1	50·0
20-30	1	...	...	...	...	...	...	...	...	1	...	...
30-	...	...	...	...	...	...	...	...	...	1	...	...
Total	108	31	28·7	128	21	16·4	84	18	21·4	600	147	24·5

aid when it is received. I have, therefore, in order that the comparative results of the antitoxin treatment, during the different years since its inception, may become clear, prepared Table V (p. 245), in which the diphtheria cases, deaths, and death-rates, are given for each age-period, after excluding all cases dying within twenty-four hours of admission. It will thus be seen that the disease apparently increased in severity from 1895 to 1898, and since that time has apparently decreased in severity, or has become more amenable to treatment.

There remains to be dealt with at some little length the nature of the cases which have been received into Belvidere in these years under review. By far the most fatal form of diphtheria is that in which the larynx is affected. Here there is a definite form of obstruction to the breathing, as well as an acute poisoning, and as the effect of the latter is to greatly weaken the heart, it is obvious that the double strain thus imposed on the patient must greatly lessen his chance of recovery. In the pre-antitoxin period these cases were especially fatal. A glance at Table VI (p. 246) will show the marked improvement here attained.

TABLE VII.—NUMBER OF TRACHEOTOMIES AND INTUBATIONS (OR BOTH) AT DIFFERENT AGE PERIODS—1895-1901.

31st May, 1895-96			1896-97.		1897-98.		1898-99.		1899-1900.		1900-01.		Total.		Percentage of Mortality.
Ages.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
-1	2	2	3	3	4	4	7	6	2	2	1	...	19	17	89·5
1-2	9	7	8	4	13	9	13	8	13	5	12	7	68	40	58·8
2-3	4	...	5	2	5	2	12	5	21	5	9	3	56	17	30·3
3-4	5	...	2	...	8	4	11	2	11	...	15	4	52	10	19·2
4-5	5	...	6	...	...	...	10	3	13	...	4	1	38	4	10·5
5-10	8	1	8	3	6	2	9	2	12	4	5	1	48	13	27·1
10-20	1	1	...	...	...	...	...	...	...	...	...	...	1	1	100·0
Total.	34	11	32	12	36	21	62	26	72	16	46	16	282	102	36·1

The fatality under one year of age is still very high, and there seems little hope of this being improved unless the cases can be brought under treatment at a much earlier period of the disease. Sucklings are much more profoundly affected by diphtheria than even children at the age of one year. In addition, they bear the operation of tracheotomy so badly as to render its use the last resort. Even among these infants, however, there has been a considerable saving of life. As, however, the age increases, this saving becomes more marked, ranging from 50 per cent at the age of one year to 80 per cent at the ages of 5 to 10. This improvement, as may be seen by reference to the table, has been of fairly uniform character, the years in which the case mortality has been highest being those of 1897, 1898, 1899, the years in which diphtheria was least prevalent in Glasgow in this decade. Among the laryngeal cases occur those in which tracheotomy or intubation may be required. As the latter operation was not found of much service, and as it was often followed by the graver operation of tracheotomy, the results of both have been gathered together in Tables VII, VIII, and IX. From these tables several conclusions can easily be drawn. It is evident that now the mortality of tracheotomy is only high in the first two years of life. In the pre-antitoxin period it was almost equally useless at all periods of life, only one patient in five surviving the ordeal. Now, with about two out of every three persons recovery takes place. This is a very marked change, indeed, and it does not represent the whole truth. Many patients who are so suffocated as to demand operative relief improve so much under the influence of antitoxin as not to require further interference. Another noteworthy point is that the proportion of cases requiring tracheotomy to the whole number has risen very markedly, as may be seen in Table IX. The reason of this is not, as might appear, that the operation is more frequently resorted to at present than formerly. I saw myself nearly all the cases on which tracheotomy was performed in the winter of 1895-96, when Dr. Marsh, who had considerable experience of diphtheria, was in charge of the

TABLE VIII.—TOTAL CASES, DEATHS, AND DEATH-RATES OF ABOVE PRE-ANTITOXIN AND ANTITOXIN PERIODS.

Age.	1872-1894.			1st January, 1895-1901.		
	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.
Under 5 years, .	93	74	79·5	242	92	37·6
Over 5 years, . .	42	35	83·3	51	14	27·4

wards, and I do not think that during last year there was a single tracheotomy done in which the urgency was less than in the former series of cases. The cause is to be found in another direction. During the same period a great change in the knowledge of diphtheria has taken place among the medical practitioners who first see the cases, and many cases are now certified diphtheria which were formerly classified together under the name of croup. This change is measured by the fact, that while in 1895, 73 deaths in the city of Glasgow were registered as simple croup, in 1900 only 19 were so registered, though the amount of diphtheria in the city is nearly the same. It is from these formerly wrongly diagnosed cases that the hospital is now receiving its increased number of patients requiring tracheotomy, and the fact that these show a diminished diphtheria death-rate argues largely for the potency of the antitoxin treatment.

TABLE IX.—TOTAL NUMBER OF TRACHEOTOMIES, &c., 1895-1901, WITH THE PERCENTAGE OF SUCH CASES TO THE TOTAL NUMBER OF DIPHTHERIA CASES SENT TO HOSPITAL.

	1st January, 1895, to 31st May, 1896.			1896-1897.			1897.1898.			1898-1899.			1899-1900.			1900-1901.		
	Cases	Deaths.	Percentage of Mortality.	Cases	Deaths.	Percentage of Mortality.	Cases	Deaths.	Percentage of Mortality.	Cases	Deaths.	Percentage of Mortality.	Cases	Deaths.	Percentage of Mortality.	Cases	Deaths.	Percentage of Mortality.
Tracheotomies	46	15	32·6	32	12	37·5	36	21	58·3	62	26	41·9	72	16	22·2	46	16	34·7
Total cases, -	242	35	14·4	180	38	21·1	174	40	22·9	213	50	23·4	235	42	17·8	182	28	15·4
Percentage of tracheotomies to total cases,	19·0			17·7			20·7			29·1			30·6			25·3		

It remains to discuss the relative results of home and hospital treatment, and the function which a modern infectious disease hospital plays in the civic economy. First, the course of the epidemic is given in the first column of Table X. It will be seen that it culminated in the year 1894, that from that year till 1898 there was a continuous fall, and that since then there has been a tendency for the disease to again increase in extent. It has been asserted by a French writer that the death-rate in diphtheria bears a relation to the extent of the epidemic—*i.e.*, if there is much diphtheria, then not only are there more deaths, but also more in proportion to the number of cases. The only point where the Glasgow statistics show this relation is between 1894 and 1895, but that is the point at which treatment by antitoxin was begun, and it must be noted that the fall in the hospital mortality greatly exceeded the corresponding fall in the cases treated. Though after this the epidemic continued to diminish in extent, yet the mortality in both the cases treated in hospital and at home continued to increase.

TABLE X.—SHOWING AMOUNT OF DIPHTHERIA IN GLASGOW SINCE THE INTRODUCTION OF THE NOTIFICATION ACT, AND ALSO THE RELATIVE NUMBER OF CASES TREATED IN THE HOSPITAL AND AT HOME, WITH THE CORRESPONDING DEATHS AND DEATH-RATES.

Year.	Case Rate per 1,000,000 Population.	Total Cases in City.	Total Deaths in City.	Percentage of Mortality.	Treated in Fever Hospital, Belvidere.			Treated at Home.		
					Cases	Deaths.	Percentage of Mortality.	Cases	Deaths.	Percentage of Mortality.
1891	822	465	131	28·2	80	31	38·7	385	100	25·9
1892	861	575	195	33·9	78	29	37·2	497	164	33·0
1893	1228	828	246	29·7	153	62	40·5	675	184	27·2
1894	1414	967	290	39·0	245	87	35·5	722	203	28·1
*1895	944	654	137	21·0	179	25	14·0	475	112	23·5
1896	854	601	116	19·3	179	34	19·0	422	82	19·4
1897	647	462	127	27·5	123	30	24·5	339	97	28·6
1898	592	433	113	26·0	203	45	22·1	230	65	28·2
1899	622	465	109	23·5	213	27	12·6	252	82	32·5
1900	715	540	125	23·1	248	50	20·1	292	75	25·6

* First antitoxin year.

Before the introduction of antitoxin the hospital mortality regularly exceeded that outside; since the introduction of that remedy it has as regularly been less. This is not a phenomenon confined to Glasgow, but, as may be seen in the accompanying tables, is the rule in large towns. Nor, as I showed earlier, when speaking in regard to tracheotomy, is it likely that this is due to the fact that the hospital gets more of the milder cases now. As it was pointed out by Dr. Marsh in his paper in 1896, the cases of wrong diagnosis which are sent to the hospital as diphtheria, consisting, as they do, very largely of scarlatina and tonsillitis, have a much smaller mortality than those of diphtheria, and among the cases left at home those wrong diagnosis serve largely to dilute the death-rate. In addition, a majority of those cases requiring immediate tracheotomy are sent instantly to the hospital. Both these cases should serve to make the death-rate of the hospital higher than that of the home-treated cases, but such, as may be seen in Table X, is very far from the case. In addition, if those cases which die within twenty-four hours of admission are subtracted from the hospital numbers and added to those of the outside, the disparity becomes more marked. This, I think, can fairly be done, as the bulk of the moribund cases are received on the third day of illness and upward. On the other hand, the fulminant cases of diphtheria admit of little treatment, and must be put to the credit side of the high outside death-rate. Deceptive enough they are even to those who are in the habit of working with the disease.

TABLE XI.—SHOWING THE CASES TREATED IN THE HOSPITAL AND AT HOME, THOSE CASES WHICH DIED WITHIN TWENTY-FOUR HOURS OF ADMISSION BEING CLASSED AS CASES TREATED AT HOME.

Year.	Treated at Belvidere Hospital.			Treated at Home.			Deaths in Glasgow certified Croup.
	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	
1895	173	19	10·9	481	118	24·5	73
1896	167	22	13·1	434	94	21·6	54
1897	113	20	17·7	349	107	30·6	48
1898	192	34	17·7	241	76	31·5	29
1899	200	14	7·0	265	95	35·8	17
1900	229	31	13·5	311	94	30·2	19

These remarks serve to emphasise several points. Firstly, necessity of early diagnosis of diphtheria. Secondly, that if there be reasonable suspicion that the disease is diphtheria, a small dose of antitoxin should be administered at once. It will do the child no harm, and will serve to retard the development of the disease. Thirdly, that if the disease be advanced at all when first seen, the patient should be at once removed to hospital, or receive a sufficient curative dose of the remedy. As this may cost about 10s., it will be seen that it is outwith the resources of many to whom their necessity requires it. If these patients are to be treated at home, then either the city or the parochial authorities should bear the expense, as is done in some of the large towns in England.

TABLE XII.—SHOWING THE AMOUNT OF DIPHTHERIA IN A NUMBER OF LARGE TOWNS SINCE 1897, AND ALSO THE RELATIVE NUMBER OF CASES TREATED IN THE HOSPITAL AND AT HOME, WITH THE CORRESPONDING DEATHS AND DEATH RATES.

Year.	Total.			Treated at Home.			Treated in Hospital.		
	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.	Cases.	Deaths.	Percentage of Mortality.
Liverpool.									
1897	463	125	27·0	265	88	33·1	198	37	18·7
1898	590	148	25·1	492	130	26·4	98	18	18·7
1899	851	218	25·6	586	149	25·5	265	69	26·0
1900	761	163	21·4	491	112	22·7	270	51	19·0
Manchester.									
1897	150	46	30·6	106	36	33·9	44	10	22·7
1898	196	51	26·0	113	36	31·9	83	15	18·1
1899	248	85	34·2	136	51	37·5	112	34	30·3
1900	337	101	29·9	156	66	42·3	181	35	19·4
Aberdeen.									
1897	93	14	15·1	67	12	17·9	26	2	7·7
1898	209	37	17·7	130	33	25·4	79	4	5·1
1899	153	29	18·9	75	21	28·0	78	8	10·3
1900	128	30	23·4	46	24	52·1	82	6	7·3

SOME CASES FROM THE ROTHESAY COTTAGE HOSPITAL.

BY J. N. MARSHALL, M.D., ROTHESAY.

I. *Rupture of the aorta in a young subject.*

On 28th March, 1901, Dr. Hall asked me to make a *post-mortem* examination on the body of a young medical student, who had died suddenly in his house. Dr. Hall has been good enough to furnish me with the following information :—

" The patient, aged 28, was very tall and slender. He had completed his curriculum, but had not yet undergone his final examination. For ten days before death, he was staying with Dr. Hall and assisting him, chiefly in the way of vaccinating, for three or four hours daily, so that his duties were very light. Four days before death, he climbed Barone Hill with a friend, and made no complaint of fatigue. On the morning of the day on which he died, he walked five or six miles with some friends, and on getting back to the house complained of pain in the stomach. He refused to take dinner, but asked for a small quantity of spirits, and, having taken this, went to his bedroom to try to vomit. Very soon afterwards he was heard to fall heavily on the floor. He was found gasping for breath; the whole surface was deeply cyanosed, and the radial pulse was imperceptible. Ether was injected subcutaneously, but had no effect, and in about five minutes all was over. It was afterwards ascertained that, on several occasions during his stay at Rothesay, patient had complained of 'pain in the stomach,' and that he had taken laudanum for its relief. Two years before his death, he had an attack of scarlet fever, with well-marked albuminuria, but the latter was supposed to have completely disappeared. He had recently ceased to accompany his student friends in the long walks which it was their practice to take."

Post-mortem examination.—Rigor mortis was present. The body was extremely spare. On opening the thorax, the pericardium was found to be distended with fluid, and on opening the pericardium about 8 or 10 oz. of bloody fluid escaped. The source of the blood was found in the aorta, visible under the external sheath of which was a layer of semi-organised clot, about one-third of an inch in thickness. This extended round the whole circumference of the vessel, from its origin, to a point near the summit of the arch, beyond the origin of the innominate. On slitting up the aorta and left auricle, a transverse rupture of the aorta was found, half an inch beyond the semilunar valves, and extending round the whole lumen of the vessel. This rupture was only visible from the inside; outside, there was the unbroken sheath, with the clot shining through. The wall of the aorta seemed unnaturally thin, and on the inner surface were a few slightly raised patches, suggesting commencing atheroma.

The heart was natural, and showed no signs of hypertrophy.

The lungs were also natural.

The abdomen was not examined.

On looking over the literature of the subject, I find that quite a number of cases of rupture of the aorta have been recorded, some in comparatively young subjects, many where there were symptoms for some time before death, and in most cases with no history of violent exertion.

Thus, Hill (*Medical Times and Gazette,* 1863) reports the case of a young woman of 20 who had symptoms, viz., syncope and sickness, for thirty-six hours before death. At the *post-mortem* examination clots were found in the pericardium, and a rupture in the aorta, the coats of which were soft, but not dilated.

A note in the *British Medical Journal* of 1879, taken from the *Presse Méd. Belge,* records a case in a pregnant woman of 37. She had pain in the epigastrium, and sickness for four hours before death. After death, a transverse rupture of the inner coat of the aorta was found.

Turner, in the *Lancet* of 1885, reports a case in a man of 64. There was collapse and syncope, and death within twenty-four hours. An L-shaped rupture of the aorta was present, and the coats of the vessel were found to be atheromatous.

In the *Glasgow Medical Journal* for 1883, Newman reports three cases, all of which he regarded as spontaneous, *i.e.,* coming on without undue exertion.

Wilks and Moxon (*Pathological Anatomy*) quote a remarkable case reported by Fagge, where, in an elderly gentleman, a tear of the inner and middle coats of one side of the aorta took place; the blood found its way down the whole length of the aorta and burst, by an opening on each side, into the common iliac arteries. The man lived for some years afterwards, the false aneurysm becoming converted into a kind of aorta.

In Dr. Hall's case it would seem as if something, possibly a partial rupture with false aneurysm, had taken place some days before death. The later symptoms and the final collapse were probably due to the blood entering the pericardium.

II. *Senile gangrene—Amputation—Recovery.*

In February, 1900, I was asked to see an old man of 73, who had a gangrenous condition of the second toe of the right foot.

His story was that his boot had been hurting him, but he had continued walking until forced to stop by the pain. The greater part of the toe was dark purple in colour, there was no evidence of circulation in it, and there was considerable pain in the toe and in the foot.

He was a tall, spare man, unmarried, with a nervous manner and stuttering speech. He was a total abstainer from alcohol, but rather devoted to tobacco.

His heart and lungs were natural, and his urine was free from albumen and sugar.

I regarded the case as probably due, in part at anyrate, to peripheral nerve disturbance, and contented myself with putting the patient to bed, wrapping the foot and leg in cotton wool, and giving him some opium and nitroglycerine.

He had complete relief from the pain, and there seemed, for a time at anyrate, to be some improvement in the appearance of the toe at its base.

After a period of about three months there was, quite suddenly, an extension of the gangrene on to the dorsum of the foot, and also to the great toe and the third toe on their sides next the second toe. There was also for the first time an appearance of moisture.

I now advised him to part with his leg, and for this purpose he went into the Cottage Hospital, where I amputated through the middle of the leg by Hey's operation. The arteries were found to be small, only one of them spouting to any extent.

The wound healed by primary union, all except one corner, where a small gauze-drain was inserted.

About the twenty-first day after operation, a dark coloured area, about 2 inches in diameter, was found on the under flap near the cicatrix. The colour deepened, and it looked as if there was going to be gangrene of the stump.

Dry dressings were kept applied, opium and stimulants were given internally, and gradually the dark area contracted, a small superficial eschar formed and separated, and after a period of about three months the skin was perfectly sound, and the patient was able to walk on crutches.

In a former case in which I amputated through the same part of the leg, but where there was flexion with fixation of the knee, a cradle with pin-leg was found to answer the purposes of locomotion very well; and here, for the sake of saving the stump from pressure, I advised the patient to adopt the same kind of artificial limb. This, he has done, and up till the present time he has been able to walk about in comparative health and comfort.

III. *Acute middle ear and mastoid disease.*

A. G., aged 25, a robust young man, who had never ailed anything before, after a long walk in cold wind and rain, while suffering from slight nasal catarrh, was seized with severe pain in the left ear and left side of the head.

I saw him first on 8th March, two or three days after his illness began. He was then highly fevered (temperature, 102·8°), the face was pale, tongue was thickly coated; pulse was only about 70, and felt strong and full.

He complained of agonising pain over the left side of the head, and there was a slight sanious discharge from the left ear. Over the mastoid there was extreme tenderness, and about half an inch from the tip of the process there was a round soft swelling. There was no œdema over the base of the mastoid, and no particular tenderness in the neck. Slight drooping of the eyelid was present on the left side, but this may have been due to œdematous swelling.

A mustard blister behind the ear and some phenacetin internally were ordered.

On the following day there was little or no improvement, and the patient was advised to go into the Cottage Hospital.

On 18th March—that is, the day following admission—there being still great pain and tenderness over the mastoid, with a temperature of 102°, it was thought advisable to open the antrum. This was accordingly done forthwith, Dr. Hall giving the patient chloroform. The soft swelling above noted was included in the lower part of the incision, and was found to be a gland. The posterior auricular was divided, and bled rather freely. An opening into the antrum, about half an inch in diameter, was made with a gouge, the bone, to all appearance, being quite natural. No pus was found, and no attempt was made to enlarge the communication with the middle ear. After cleansing the meatus, it and the cavity of the antrum were packed with iodoform gauze, and the patient was put back to bed.

After this there was a marked improvement in all the symptoms, but especially as regarded the pain. There was, however, a certain amount of apathy, with reluctance to talk, and slowness of speech. The temperature gradually fell until, on the sixth day after the operation, it was 99·8°. The pulse remained always about the same, viz., 72.

On the sixth day, the mastoid wound was dressed, and the packing removed. There was very little discharge, the parts looking clean and healthy. There was, however, a profuse muco-purulent discharge from the meatus.

For two or three days after this everything went well, but on 18th March the temperature rose to 102°, without there being any pain or discomfort. The wound was dressed on the following day, and the gauze was now found to be soaked with a muco-purulent discharge, identical in character with that which was coming from the meatus.

For the next three weeks, the discharge from both antrum and meatus continued to be very profuse, and the temperature ranged from 99° in the morning to 100° to 101° in the evening. There was no pain, and the patient took his food well, but he was listless and apathetic, slept a great deal, and would sometimes fall asleep while his friends were talking with him. There was slight tenderness in the neck below the tip of the mastoid, but this was never extreme.

At the end of four weeks from the time of the operation, there was a small fluctuant swelling over the temporal region, which was evidently a subperiostal abscess in communication with the mastoid wound. It was determined to open this, and, at the same time, clear the mastoid cavity and wound of granulations, which were interfering with drainage. This was accordingly done under chloroform on 7th April. After this, the temperature immediately fell to normal, and the discharge gradually lessened.

The patient's manner was now found to be quite altered. He lost his listlessness, took his food heartily, and became anxious to get up and about.

He was dismissed on 23rd May, and the wound healed finally and completely in July, the meatal discharge having ceased some time previous to that date.

The question of the propriety of operating here was rather a difficult one, but the great relief to the symptoms which followed the operation, seemed to justify it. The suppuration in the antrum was an unfortunate occurrence, but the infection was at least as likely to have come by way of the middle ear as from the outside; and if suppuration had taken place in the antrum without there being an external opening, serious consequences might quickly have ensued.

IV. *False aneurysm of the radial artery.*

A youth, aged 18, a grocer's assistant, while cleaning a ham bone, let the knife slip, and the point entered the fore-arm, over the radial artery, about 2 inches above the wrist. Blood spouted from the wound.

The boy went to a chemist, who applied Friars' balsam, on a pad of lint, with a bandage. This stopped the bleeding externally, but some days after, the whole arm became much swollen and dark in colour. The swelling gradually subsided, and the wound healed, but a small, soft, pulsating swelling remained at the site of the puncture.

Four weeks after the injury I saw the boy with Dr. Lawson. There was then a soft, fluctuant, slightly pulsating swelling, about the size of a hazel-nut, immediately under the cicatrix of the wound. The margins of the swelling were not accurately defined. They shaded off into a firm base, the resistance being more marked towards the middle line of the fore-arm. The skin over the most prominent part of the swelling was red, and looked as if it might, at some not distant time, ulcerate. The pulse below the swelling could be felt, but it was much weaker than on the left side. Pressure on the brachial, and also raising the arm, diminished the tension of the swelling, and at the same time caused the pulsation to cease. It was quite evident that it was a blood tumour, in direct communication with the radial artery, but what the walls were composed of could not be made out. We agreed that the best thing to be done was to cut down upon the swelling, and tie the radial artery above and below.

On 7th October, the patient was admitted to the Cottage Hospital, and the operation was done on the afternoon of the same day. Chloroform having been given, an incision about 4 inches long was made over the course of the radial artery, and over the little tumour. The latter, when opened, was found to consist entirely of blood-clot. The vessel was first exposed below the swelling, and tied there. It was then traced up into the mass of clot, and the latter being cleared away, a little wound, about one-third of an inch long, was found in the anterior wall of the artery, the direction of the wound being in the long axis of the vessel. The artery was exposed for a little distance above the wound, and tied again there. The sheath of the artery was adherent to the tendon of the supinator longus, alongside of which it lay. The blood-clot, which amounted to about half a teacupful, showed no signs of organisation. It was mostly black in colour, but that next the artery was red. When the clot was cleared out, the cavity in which it lay was found to extend about half way up the fore-arm, between the supinator longus and flexor carpi muscles.

The Esmarch bandage having been removed, and there being no bleeding to speak of, the wound was closed, a small gauze drain being left in.

The wound healed by primary union, and the stitches were removed on the tenth day. The radial pulse below the wound was then stronger than it was before the operation.

V. *Strangulated femoral hernia in a man.*

On the evening of 24th October, I was called to see a middle aged man, a roadman and trimmer of hedges, who, while at work in the afternoon, had been suddenly seized with pain in the abdomen.

Some four or five years before, he had had some threatening of right femoral hernia, but, wearing a truss regularly, he suffered little inconvenience from it. His truss had got broken, however, and this day he was without it.

I found a right femoral hernia, about the size of a walnut, which I was unable to reduce. Constitutional symptoms not being very severe, I left him until the morning.

Next morning he looked much worse, having vomited at intervals all night.

He was accordingly brought into the hospital, and I operated the same afternoon, just twenty-four hours after the strangulation occurred. The sac of the hernia contained some bloody fluid, and the bowel was dark purple. After reduction, the sac was found to be so adherent to its coverings that it could not easily be dissected off. It was therefore folded and stitched with buried sutures.

Recovery was uneventful. The patient has since resumed his rather heavy work, and, so far, without any trouble. He wears a truss, however.

VI. *Tubal gestation with rupture and hæmorrhage into the peritoneal cavity.*

This case was reported in a recent number of the *British Medical Journal*, and will only be briefly referred to here.

It was that of a young woman who, seven and a half weeks after her last menstrual period, was seized with violent pain in the abdomen, accompanied by faintness, sickness, and vomiting. She was found in an absolutely pulseless condition, which, with the accompanying pallor, at once suggested an internal hæmorrhage.

No definite tumour could be found on vaginal examination, but there was a discharge of grumous blood from the uterus. The abdomen was protuberant and tender, but not hard. The patient was removed at once to the hospital.

On the following morning she had rallied considerably, and, with the assistance of Drs. Hall and Lawson, I opened the abdomen. The peritoneal cavity was found to be filled with blood and dark blood-clot. From a mass of rather more solid clot, the left tube and ovary were extricated, and on the tube was found a sac, about the size of a pigeon's egg, ruptured in its whole length towards the free border of the broad ligament. The ovary and tube were then ligatured and removed. The embryo was not found. After clearing out as much clot as was possible with the hand, the peritoneal cavity was irrigated with hot saline solution. No drainage was employed.

The patient was much collapsed after the operation, but seemed benefited by the subcutaneous injection of saline solution.

The wound healed by primary union, and there was an uninterrupted recovery.

A complete cast of the uterine mucous membrane was discharged a few days after the operation, and there was a natural menstrual period a month later.

ON OBSTRUCTION OF THE CORONARY ARTERIES.[1]

By JOHN M. COWAN, M.B.

The heart differs from every other organ of the body, with the possible exception of the lungs, in that it works without any break or interval during the whole lifetime of the individual, any interruption for more than a very few seconds causing death; and even the lungs can scarcely be said to be on a par in this respect with the heart, as the interchange of gases between the air in the alveoli and the blood in the capillaries is more of a chemical than a vital phenomenon, while the respiratory movements have a double origin—thoracic and abdominal—and one can be thrown out of gear while the other does the necessary work.

In another respect the heart is singular; if the stomach is offered a meal which it is unable to digest, it can always get out of the difficulty by ejecting its contents; while no matter how great the strain that is imposed upon the heart, it must continue to work or it will stop for ever, and even a partial failure will react unfavourably, and at once, on all the tissues of the body.

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[1] Read at a meeting of the Glasgow Pathological and Clinical Society held on 10th February, 1902.

The importance of the proper nutrition of the cardiac muscle is thus self-evident, and it is emphasised by the special means which are adopted to ensure it. Its nutrient arteries arise from the first part of the aorta, where the blood contains the largest proportion of oxygen and the smallest quantity of carbonic acid, and the vessels themselves are very large if the size of the organ which they supply is taken into account; in addition, they are not the only source of nutrition, for the heart contains blood in its own cavities, and though the coronary arteries are the main source, the endocardial blood can afford some assistance, and in disease its effects may be sometimes observed.

Disease of the coronary arteries is by no means uncommon, and is frequently, but not invariably, the precursor of pathological lesions in the myocardium, and I propose in this paper to review the macroscopic changes which may occur in these vessels, and the different results which may ensue in the cardiac muscle. Like arteries elsewhere, the larger or the smaller vessels may be damaged by pathological processes, but disease of one set by no means necessitates a lesion in the other, while if both are involved, the amount of damage inflicted may vary, according as the larger set is mainly implicated or *vice versâ*. Disease of the microscopic arteries —the most frequent cause of chronic myocardial lesions—may thus be entirely missed, if the external arteries alone are examined, and an inference drawn from their condition.

It will, perhaps, avoid needless recapitulation if I now state shortly some details of the vascular supply of the heart.

The right coronary artery is usually the smaller of the two, and arises from the anterior sinus of Valsalva. It passes to the right in the auriculo-ventricular groove, giving off branches to the adjacent muscle, and terminates in a large branch which runs downwards in the posterior interventricular sulcus. It supplies blood to the right auricle, almost the whole of the right ventricle, and to the posterior parts of the left ventricle and the interventricular septum.

The left coronary artery arises from the left posterior sinus of Valsalva, and passes to the left in the auriculo-ventricular groove; it divides almost at once into two main branches, the larger of which descends in the anterior interventricular sulcus, while the smaller continues its course in the auriculo-ventricular groove. These supply the left auricle, the anterior two-thirds of the interventricular septum, the bulk of the left ventricle, and a small portion of the anterior surface of the right ventricle.

The main horizontal and vertical branches of the two arteries anastomose with each other by minute twigs, and thus form around the heart two rings of vessels which are almost at right angles to each other. From the main branches of these rings smaller arteries penetrate the muscle, giving off still smaller vessels, which end in a very free capillary system, so extensive, indeed, as to surround each individual muscle cell on almost every side. While the main trunks anastomose with each other, there is no arterial connection between

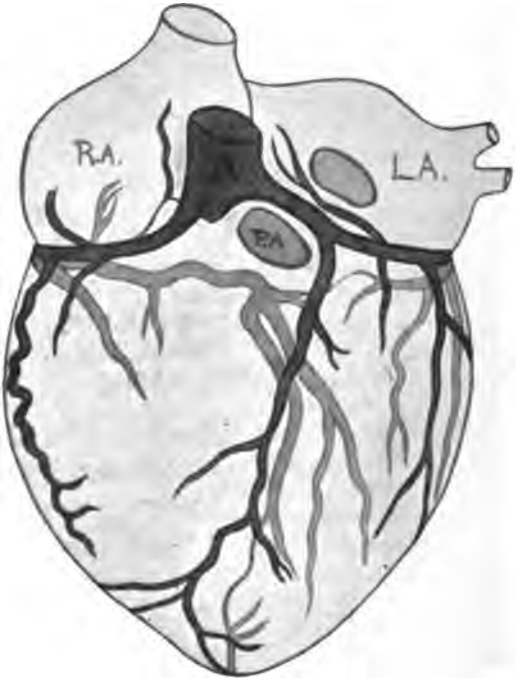

Fig. 1.

Diagrammatic representation of heart viewed from the front, showing the normal arrangement of the arterial trunks.
***A.*, aorta ; *P.A.*, pulmonary artery ; *R.A.*, right auricle ; *L.A.*, left auricle.**

any of their branches, and these latter are to all intents end-arteries.

While the majority of writers on this subject describe the above mentioned anastomoses, it is curious that none of them follow up the argument to its logical conclusion, that, if any arterial anastomosis exists between the two vessels, a compensatory hypertrophy of the one may develop if the other becomes obstructed. Thus, Steven[1] says, "The arterial inosculations are so trifling and so far apart from each other that they are quite unable to compensate for vascular obstructions, except in their immediate neighbourhood, and even then only after very considerable destruction of cardiac tissue has occurred;"

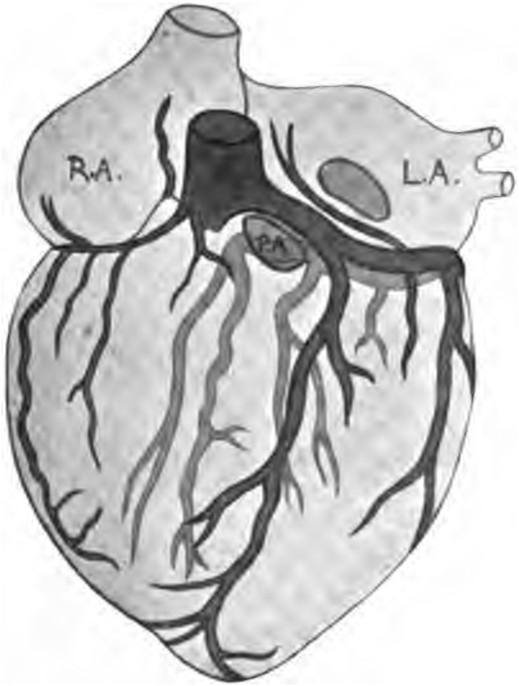

FIG 2.

Diagrammatic representation of a heart (6471) in which the right coronary artery was much atrophied, its orifice being obstructed by aortic atheroma. The left artery, which was much enlarged, gave origin to the posterior interventricular branch.

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[1] J. Lindsay Steven, "On Fibroid Degeneration of the Heart," *Lancet*, December, 1887.

while Marie[1] remarks, "Les choses se passent-elles ainsi en pratique? Non. Le plus souvent on trouve une oblitération du tronc d'une des coronaires et un infarctus plus ou moins diffus, plus ou moins grand du territorie irrigué de cette artère. C'est une preuve que les anastomoses décrites ne suffisent pas à rétablir entièrement la circulation."

I have examined three cases in which one coronary artery was obstructed and the other hypertrophied, and I do not believe that these cases are unique. In one (6471), which is narrated in detail later on, the right artery was almost obliterated at its origin by atheroma of the aorta, and the left was much hypertrophied, and its transverse branch supplied the posterior interventricular artery; in another (6486), the left orifice was similarly obstructed and the right artery was much larger than normal; in neither of these cases was any macroscopic lesion of the myocardium apparent. In the third case (6363), the right artery was obstructed and the left dilated, and some fatty changes were present in the muscle of the right ventricle.

Steven's contention that the inosculation is minute and consequently can be of no use, is fallacious, as all that is required is that the anastomosis be arterial and not capillary only. When a channel is present, it can develop as much as is required in the given case.

Besides the anastomoses described above, another is sometimes present between the auricular branches.

Variations in the origins of the coronary arteries are not very uncommon. Both coronary arteries sometimes arise from the same sinus, either as one trunk, which soon divides, or as two: a specimen in the Western Infirmary museum (II, 58) shows this latter anomaly, only two aortic cusps being present, the right posterior cusp being in its usual situation, while the left posterior and the anterior are fused together; both coronary arteries arise in the latter sinus, the orifices being some 1·5 cm. apart.

In the museum there is another heart (II, 10) which shows a very rare abnormality. The right coronary artery arises from the anterior sinus of Valsalva as usual, but the left coronary artery is represented by a vessel which arises from the pulmonary artery. This condition must have originated in the very early stages of development, before the aorta and pulmonary artery were separated off from the arterial bulb of the fœtal heart. The blood-supply of the left ventricle, being venous in character, must surely have caused defective nutrition of this part.

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[1] R. Marie, *L'Infarctus du Myocarde*, Paris, 1897.

Supplementary coronary arteries are frequently met with, arising, perhaps, with a main vessel from the bottom of a small pit in the aortic wall, in which case they should be considered to be merely branches with an abnormally high origin; or having a distinct orifice separate from that of the main artery. More than one may be present, and occasionally an artery arises from each of the three sinuses (II, 47). The importance of supplementary arteries, however, is small, as they are at once distributed to a part of the muscular wall, and only represent nutritive branches.

The coronary arteries send a few small branches to the aorta and the pulmonary artery, and an anastomosis of these with corresponding branches of the bronchial arteries is possible, and has been described.

The foramina of Thebesius are present in all the cavities of the heart, though they are more numerous on the right side, and they communicate with the arteries and veins by means of capillaries, and with the veins in addition by passages of somewhat larger size. In the right auricle they may be provided with thin single valves, but elsewhere these are absent, and although usually considered to be veins, emptying directly into the cavities of the heart, the evidence of this seems inconclusive, and they may, perhaps, be arterial in function. In favour of this view is the fact that Pratt[1] has shown that the cardiac muscle of a dog can be sufficiently nourished to continue contracting for several hours after removal from the body, even although the coronary arteries are ligatured and out of action, if a suitable fluid is allowed to pass into the cardiac cavities.

The possibility of the endocardial blood normally affording some nourishment to the adjacent muscle must also be remembered, and in disease of the coronary arteries there is occasionally evidence that some such occurrence takes place. Muir has pointed out that in cases of healed infarct, and in dystrophic fibroid hearts, a thin layer of muscle always persists along the endocardial surfaces, though the cells may be somewhat abnormal, and my own observations corroborate this statement. The only other possible explanation of their continued existence would be the presence of a free capillary circulation along the sub-endocardial layers; the practically uniform thickness of the layer in question is, however, against this supposition.

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[1] F. H. Pratt, "The Nutrition of the Heart through the Foramina Thebesii and the Coronary Veins," *American Journal of Physiology*, January, 1898.

It is thus evident that the possibility of an anastomotic channel taking up the work of a plugged vessel is very limited; if either of the main arteries is stenosed near its origin, the other may hypertrophy and undertake the work, but obstruction of a smaller vessel means death to the area of muscle involved, unless the latter is very minute and can live on a capillary anastomosis. Any abnormality in the origin of the vessels is useless in this respect, as supplementary arteries simply represent nutritive branches, and are, in consequence, end-arteries. Anastomosis with the bronchial arteries is possible, but has rarely been observed; the comparative infrequency of auricular fibrosis may, perhaps, be due to such a development. The endocardial blood can only influence a very few layers of the adjacent muscle.

PATHOLOGICAL CONDITIONS WHICH MAY AFFECT THE CORONARY ARTERIES.

The coronary arteries may be affected by various pathological processes, some of which, however, can only obtain in certain situations.

1. The orifice of an artery may be narrowed.

(*a*) This is not at all uncommon as the result of aortic atheroma, and is not necessarily a sequel only of extensive disease. All that is required is that the atheromatous patch be in the immediate vicinity of the arterial orifices, and though usually stenosis of a coronary vessel is accompanied by a more or less general lesion of the aorta, still it does occur when only one or two small plaques are present (6486). The stenosis may be partial or complete, but the latter is an exceptional finding, as death usually results before it can occur. I have, however, examined a heart (6471) where the orifice of the right coronary artery was invisible on the aortic aspect, and the artery itself greatly atrophied, though pervious. The finest probe, however, even when introduced into the vessel, was unable to pass through the stricture. In another case (6321) the occlusion was apparently incomplete, but a secondary endarteritis has almost filled up the lumen of the vessel at a point immediately outside the aortic wall.

(*b*) An acute aortitis may affect the orifice. In a heart in the museum of the Western Infirmary (II, 73), the early stage of this is well seen. An acute endocarditis of the aortic valve had led to rupture of a cusp, from which hung an infective tag which was freely movable in the blood stream, and, at a point on the aortic wall immediately surrounding the orifice of the right coronary artery, there were situated several small vegetations, the result of the continued impact of this tag. If recovery had taken place, the orifice of the artery must have been involved in the cicatrices.

(*c*) The orifice may be occluded in another way. In a case which I examined recently, the wall of the aorta was intact, and *post-mortem* the lumen of the vessel seemed normal, but immediately above the orifice a small local aneurysm of the aorta was present, which from its situation must, during life, have pressed upon the artery, and prevented the free passage of blood.

2. The arteries themselves may be diseased.

(*a*) The most common affection of the coronary arteries is patchy atheroma, which may vary greatly in its extent and site. One or two small plaques may alone be found, or they may be so large and numerous as to be almost confluent; they may implicate both vessels or be confined to one, but it is rare for one artery to be extensively involved without the other showing traces of the change. The left artery is much more frequently affected than the right, and the condition is usually most marked in its descending branch, but the reverse sometimes obtains. The explanation of this predominance is that the interventricular arteries are most exposed to alterations of position and tension during the cardiac contractions.

Patchy atheroma does not necessarily lead to narrowing of the arterial lumen, the vessel being most frequently somewhat dilated and tortuous; this statement, however, only applies to the case of the larger branches, as stenosis is the rule in atheroma of the minute vessels.

(*b*) Diffuse atheroma may accompany the patchy change, or be the sole lesion. It is much less common than the patchy variety, and sometimes tends to narrow the lumen of the vessel.

(*c*) Syphilitic endarteritis may attack the coronary arteries, and usually leads to stenosis. The smaller arteries are most frequently affected.

(*d*) Calcareous deposits may be formed in (1) an atheromatous patch, or (2) the muscular coats. Neither of these conditions necessarily leads to stenosis.

(*e*) Aneurysm may arise on the coronary arteries.

3. Emboli may enter the coronary artery, but this has, of course, no necessary relation to the artery itself. Emboli may arise from valvular endocarditis, or from clots formed in the pulmonary veins, the left auricle, or the left ventricle (6251). They may be infective in character. This latter condition obtained in the case of acute aortic endocarditis which is mentioned above (II, 73), the descending branch of the left coronary being plugged by an embolus which had broken off from the vegetations on the aortic valve.

4. Thrombosis may occur in the coronary arteries. It is much more liable to happen if the vessels are atheromatous, but may occur without any evident arterial change from any condition which notably impairs the contractile power of the ventricle. In four cases of thrombosed vessels which are in the museum of the Western Infirmary, the arteries are markedly atheromatous. In another case (II, 23), an aneurysm had formed on the descending branch of the left coronary artery. This became filled with clot, which ultimately completely blocked the lumen of the vessel; the artery was extensively atheromatous.

THE RESULTS OF CORONARY OBSTRUCTION.

The results of coronary obstruction vary, as they are dependent on the situation of the block, the degree of stenosis produced, and the rapidity with which it occurs; and have little relationship with the cause producing the obstruction.

I. *Obstruction at the orifice, or of one artery.*

1. If the obstruction is complete and sudden or comparatively rapid, immediate death may ensue, as a large mass of muscle at once loses its power of contraction. No pathological change will be found in the affected muscle, as no time will have elapsed, before death takes place, in which such changes might occur.

2. Even if an artery is completely occluded, death need not ensue at once, the other vessel by its anastomotic connections preventing some of the area involved from dying; a portion, however, will necrose (infarct), and death may result from more or less slow cardiac failure, or from rupture of the heart. In rupture of the heart, according to Birch-Hirschfeld,[1] the sequence of events is as follows:—

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[1] F. V. Birch-Hirschfeld, *Lehrbuch der Pathologischen Anatomie*, Leipzig, 1896.

After the infarct has occurred, if death does not result, inflammatory reaction, often preceded by effusion of blood, takes place, and this leads to weakening of the tissues in the periphery of the necrotic area; should this weakened area extend near the endocardium, the endocardial blood soon forces an entrance, and tearing its way along the track of the reactive processes with each successive heart beat, it ultimately reaches the pericardium and perforates it. The path of the blood through the muscle may thus be devious, and the endocardial and pericardial lacerations may not correspond *in situ*, but if the communication is large, they correspond more closely.

Rupture may be due to embolism or thrombosis; the latter was causal in the following case:—

A woman, æt. 78, a patient in the Surrey Lunatic Asylum, was apparently in her usual health one morning at 4 A.M., but was found dead in her bed a few hours afterwards. On examination, the pericardium was found to be filled with clotted blood, and a rupture was discovered in the posterior part of the left ventricular wall near its upper limit, the muscle surrounding the laceration being very soft and friable. The vessels in the vicinity were pervious, but a thrombus was found in the main right coronary artery, not far from its origin, and completely occluding it. The thrombus was granular, and evidently not of recent origin; death on its formation must have been prevented by the anastomotic connections of the left artery, which, however, were insufficient and permitted a local necrosis, and death resulted from rupture in the manner which has been described.

Four of the five cases of rupture of the heart in the Western Infirmary museum came from lunatic asylums, and it is interesting in this respect to recall how common arterial disease is among the insane. A large number of patients who die of rupture of the heart are elderly, and it seems probable that the condition may not be so rare as the records show. Old people often die suddenly, but in private practice *post-mortem* examinations are the exception, and the exact cause of death is generally not ascertained.

Rupture may also occur from trauma, or as the result of abscess in the wall of the heart, or at the site of an aneurysm.

Fatty degeneration of the myocardium is mentioned by many writers as a cause of rupture, but the evidence on which this assumption has been made seems to me inconclusive. In infarct of the heart, fatty changes may occur in the muscle cells, and they are also sometimes present in the atrophic cells near a fibrous patch, but the condition is accidental rather than essential, and is not in all probability the proximate cause of the rupture. It is noteworthy that patchy fatty changes are said by these authors to be more likely to cause rupture than the diffuse degeneration, and the influence of coronary disease in producing local fatty changes is generally mentioned. In the examination of some eighty fatty hearts, I have never found any evidence of local aneurysm, nor have I met with a case of rupture: and without denying the possibility of fatty degeneration being causal, I am convinced that the causes, as shown above, are the main factors in producing the condition.

3. If, however, the closure is gradual, a variety of conditions may obtain.

(*a*) Compensatory changes may occur in the other artery, and but little damage may ensue to the cardiac muscle. This had occurred in the case (6471) where the right coronary was occluded at its origin by atheroma of the aorta; the left artery was much larger than usual, and supplied the posterior interventricular branch.

The history of the case showed that the compensation had been almost perfect. The patient, a man, æt. 60, died of cardiac failure. He had always been healthy until six years before, when he had had an attack of erysipelas, and since that time had noticed that one or other foot was often swollen at night, but otherwise he felt in good health, and remained able to do his work as a foreman blacksmith. Two months before his death he caught cold, and afterwards became somewhat rapidly very short of breath on exertion, but he was able to continue his work until nine or ten days before his death.

The arterial condition was manifestly of old standing, and must have ensued many months before the onset of symptoms. Œdema of the feet is so commonly due to other than cardiac causes, and in this case was of such long duration that it seems probable that it was not due to the cardiac condition. To the naked eye the cardiac muscle appeared to be normal, but on microscopic examination the muscle fibres showed well marked granular degeneration, though only a very few cells were fatty; the connective tissue was very cellular and in slight excess, a few small patches of fibrosis being found; the arterioles and capillaries were markedly fatty. It seems probable, however, that the degenerative changes only occurred shortly before death, when the valvular defect was becoming extreme and too great for the muscle to overcome, and when, from the effects produced on the other organs by the cardiac failure, the general nutrition was beginning to suffer.

(*b*) Compensatory hypertrophy of the other artery may not obtain, or, if it does, may be insufficient, and degenerative changes may occur in the affected muscle. The usual defect is granular degeneration, but fatty degeneration is not at all uncommon.

A man, æt. 42 (6321), died of aortic disease, the result of endocarditis and atheroma, and the right coronary artery was found to be greatly stenosed at its origin; the left was not enlarged. On microscopical examination, the cardiac muscle was found to be fatty and much atrophied, and the change was most marked in the right ventricle; usually in aortic disease the reverse obtains, and the fatty changes are greatest on the left side, where the greatest stress falls; but here the coronary obstruction had interfered with the nutrition of the right heart in particular, and the degeneration was in consequence greatest in this part.

(*c*) As a final result of slow starvation the muscular fibres atrophy and may ultimately disappear, and be replaced by fibrous tissue. Gibson and Muir[1] have reported a case where the left coronary artery was stenosed at its orifice by aortic atheroma; the anterior and most of the lateral walls of the left ventricle were greatly thinned, the central parts being replaced by fibrous tissue, and only a few muscle cells still existed along the endocardial surface. There was but little disease of the minute arteries, and the condition must have been produced by the stenosis of the orifice.

II. *Obstruction of a main or nutrient branch.*

The results of obstruction of main or nutrient branches theoretically might vary, as the descending and transverse branches have anastomotic connections with the corresponding vessels, while the nutrient branches are end-arteries. The obstruction, however, is rarely sufficiently gradual to prevent marked changes from occurring.

1. If a main branch is suddenly and completely blocked, sudden death may ensue.

A woman, æt. 32 (6251), was operated on for cholelithiasis, the operation being difficult and prolonged. There was little shock, however, and next morning she was very cheery and joked with the surgeon. About noon she suddenly died. On examination, the left descending coronary artery was found to be plugged in its upper third by a movable embolus, which had evidently arisen from some granular thrombi which were found at the apex of the left ventricle. The cause of the intracardiac thrombosis was, however, only made manifest on microscopic examination of the cardiac muscle. Macroscopically this appeared to be normal, but the examination of sections showed some fibroid and fatty changes to be present, which had evidently allowed of stagnation of the ventricular blood.

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[1] *Edinburgh Hospital Reports*, 1894.

2. Even when a large branch is suddenly occluded, death may not result at once, but may ensue in a few days from slow cardiac failure.

A man, æt. 55 (II, 27), died eight days after the somewhat sudden onset of cardiac symptoms (thoracic pain, dyspnœa, &c.). On examination, the descending branch of the left coronary artery was found to be thrombosed for a distance of nearly 4 cm., and at the apex of the left ventricle the muscle "was thinned and replaced by pale yellow substance with a hyperæmic edge" (acute necrosis). In this case the amount of muscle thrown out of gear was insufficient to cause instant death; a fatal issue, however, ensued, as the circulation was imperfectly carried on by the damaged cardiac muscle.

Acute necrosis (infarct) is more frequently the result of thrombosis than of embolism, the gradual closure of the vessel being more or less suddenly completed, and causing death of the corresponding muscular fibres. If the area involved is small, the necrotic muscle may be removed and ultimately replaced by a fibrous scar (6436).

3. If an artery is occluded by an infective embolus, an abscess will result.

4. If the obstruction is gradual and involves a nutrient branch, the muscle cells will atrophy and be replaced by fibrous tissue, and this is the common cause of fibroid patches in the myocardium (6354). The whole process is often beautifully demonstrated in sections of such hearts, the minute arteries being embedded in a more or less circular mass of muscle cells. Those nearest to the vessel are normal, while those farthest away show marked granular degeneration. Fatty changes are not necessarily present in the atrophying cells.

The so-called aneurysm of the heart is almost invariably the result of coronary obstruction. In the case (II, 31) mentioned above, where the left descending coronary was occluded, the left ventricle presented a local bulging on the lower part of its anterior surface.

Such aneurysms may arise in two different ways—

1. If an infarct occurs, and healing takes place, the resulting scar may be unable to withstand the interventricular pressure, and an aneurysm will be formed; in such a case the wall of the aneurysm will be mainly composed of fibrous tissue (II, 31). (A fibroid patch of other than coronary origin may, of course, be the cause of the weakening of the cardiac wall, but such patches are rarely of large extent.)

2. In incomplete stenosis, atrophy and loss of muscle cells may result, with or without marked increase in the amount of connective tissue, and an aneurysm may be formed (6454). In this case the wall of the aneurysm may be mainly composed of muscular tissue.

It might appear from a consideration of the foregoing that lesions of the coronary arteries should always lead to alterations in the myocardium; but this is by no means the case, and I have examined twelve hearts in which the coronary arteries were diseased, and in which microscopic examination showed that no serious lesion was present, while Steven[1] states that in ten similar cases which he has examined (? microscopically) the heart was normal.

Conversely, I have examined sections of eleven hearts in which the coronary arteries were normal, but in which the muscle was diseased, and Steven has examined thirteen.

The evidence on which the condition of the coronary arteries was based, was, however, the naked eye examination of the superficial vessels, and no distinction has been drawn in regard to the extent of the lesion; so that cases where the lumen of the coronary arteries was seriously interfered with are mingled with cases where only one or two patches of atheroma were present; and, in particular, no reference has been made to the condition of the microscopic arteries, which is a much more important factor in the production of myocardial disease.

In a very interesting paper by Wild,[2] some facts are stated which tend to throw light upon this point. He has investigated the size of the coronary arteries with reference to the weight of the heart, and he gives a table indicating the proportion of area of coronary arteries to the ounce of cardiac muscle; in this he shows that, even in normal hearts with normal arteries, the proportion is very variable. During the period of rapid growth it may be as much as 3·5 sq. mm., while in the adult it is less, varying between 2·4 and 1·04 sq. mm. This has an important bearing on the ultimate result of coronary disease, as it is evident that a patient, whose relative area is large, will have more latent possibility of hypertrophy of cardiac muscle than one whose relative area is small. The effects of coronary disease will also vary in a similar way, the tendency to the production of pathological conditions being greatest in cases where normally the relative area is small.

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[1] J. Lindsay Steven, "A Contribution to the Pathology of the Coronary Arteries," *Glasgow Hospital Reports*, 1898.

[2] R. B. Wild, "A Contribution to the Pathology of the Coronary Arteries," *Medical Chronicle*, July, 1892.

The frequency with which diseased arteries become dilated is also indicated, his normal hearts with diseased arteries having a proportion of area which varied from 3·05 to 1·28 sq. mm.; and one might argue that in cases where coronary disease had produced myocardial lesions, the normal must have been small, or dilatation of the vessel had not ensued. The paper, however, is silent upon this point.

It must not be forgotten that lesion of the coronary arteries is only one cause out of many in the production of disease of the cardiac muscle, and that though it is an important one, still general constitutional disorders probably play a yet more important part.

RÉSUMÉ.

1. The coronary arteries may be obstructed—(1) at their origin; (2) in their course.

2. If the obstruction involves a main artery and the closure is gradual, compensatory enlargement of the other artery may prevent damage to the cardiac muscle, but perfect compensation is rare, and necrosis or fibroid change commonly ensues; if, however, the closure is rapid, sudden death is the usual result.

3. If the obstruction involves a small artery, no compensatory arrangement is possible, and the nutrition of the cardiac muscle will suffer, whether the closure is rapid or gradual.

4. (*a*) If the obstruction is partial, some of the muscle may degenerate (granular or fatty degeneration), and may ultimately disappear and be replaced by fibrous tissue. (*b*) If the obstruction is complete, some of the muscle will become necrosed (infarct), and the patient may die from slow cardiac failure or from rupture of the heart; if, however, the infarct is of small size, healing may take place, and a fibroid scar be ultimately formed.

I have great pleasure in acknowledging my indebtedness to

Professor Muir for the material upon which this paper is based, and for much kindness and assistance; and I have also to record my obligations to Professor Gemmell, Dr. Renton, and Dr. W. Stewart Stalker, for allowing me to make use of their clinical records.

The figures in brackets throughout the text are references to specimens in the museum, or to cases which are recorded in the reports, of the pathological laboratory of the University of Glasgow.

SURGICAL DISEASES OF THE KIDNEY: THEIR GENERAL SYMPTOMATOLOGY AND PHYSICAL DIAGNOSIS—WITH ILLUSTRATIVE CASES.

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(*Continued from* p. 16.)

In acute and chronic Bright's disease, the albuminuria is due to organic changes in the kidney. The renal lesion is a consequence of certain soluble irritants circulating in the blood, and hence the disease is always bilateral. The term Bright's disease is synonymous with nephritis, excluding those forms of inflammation which are due to septic or tuberculous infection.

The great distinction between the albuminuria of Bright's disease and that of surgical diseases of the kidney is in their causation. In surgical diseases the albuminuria is a consequence of some local injury to the kidney, to some direct mechanical interference with its circulation, or to the local action of microbes, and consequently the general symptoms mentioned below are seldom observed, whereas in Bright's disease the renal lesion is only a part of the disorder; the toxic material being in the blood all organs suffer more or less, but the kidneys being the most active excretory organs their functions become impaired early in the course of the illness, and the structural changes produced in the renal parenchyma are often the most pronounced feature of the malady. If the disease is advanced, morbid changes in other organs are indicated by signs and symptoms which furnish a means of estimating the diagnostic importance of the albuminuria. The most obvious changes are those affecting the circulation, the vision, and the alimentary system.

An inquiry into the following points may aid in the diagnosis:—

1. The persistency of the albuminuria.
2. The specific gravity of the urine.
3. Variations in the quantity of albumen according to external temperature, or conditions of diet, of rest, or of work.
4. The state of the alimentary system and of the skin.
5. The changes in connection with the nervous system, the circulation, and vision.

The persistency of albuminuria can only be ascertained by examining the urine regularly day by day, and at different hours of the day. When albumen is found to be present in but slightly varying quantity in a patient beyond 40 years of age, in the absence of well-defined pain in the lumbar region, it may generally be presumed that the albuminuria is the result of some form of Bright's disease, and should the urine be almost constantly of a pale colour, of a low specific gravity, and deposits granular or epithelial tube-casts, then the diagnosis of organic disease of the kidney is distinctly strengthened. The influence of diet and external temperature cannot be regarded as of much diagnostic value, as in almost all forms of albuminuria these factors play a part. The effects of rest are most marked in cases of albuminuria which are not due to Bright's disease.

In cases of movable kidney, in hydronephrosis, and in tumours of the kidney, the albuminuria may disappear in a few days after the patient has taken to bed, so also in cases of cardiac albuminuria recumbency is in some cases sufficient to reduce the undue vascular tension of the kidney, and so cause the albuminuria to cease for the time being. In the cases just referred to, rest has a marked influence in diminishing the quantity of albumen, and conversely, exercise and work at once induce an increase.

When the albuminuria is due simply to passive hyperæmia, the amount of albumen varies from day to day, the urine is scanty, deeply coloured, and of high specific gravity. On the other hand, in cases of chronic Bright's disease, while the quantity of albumen may likewise vary, the excretion is generally abundant, of a pale colour, of a low specific gravity, and there is not only a relative, but also an absolute diminution in the quantity of urea and other urinary ingredients excreted. In Bright's disease, derangement of the digestive system is very common, as indicated by loss of appetite, dyspeptic symptoms, nausea or vomiting, irregularity of the bowels, and sometimes sudden or severe diarrhœa. There may also be evidence of deficient action of the skin, which is often rough, harsh, almost always anæmic and dry; and, as a rule, it is difficult to induce diaphoresis. Slight dropsy may be one of the first signs to attract attention. Headache and giddiness, inability to do mental work, and irritability of temper are frequent indications of the toxæmia of Bright's disease in the early stages, while in the later developments of the malady, so-called "uræmic symptoms" appear in the form of muscular twitchings, fits of epileptiform convulsions, cerebral disturbance, delirium, stupor, and coma. The changes connected with the circulatory system are hypertrophy of the myocardium, dilatation of the cavities of the heart, thickening of the endothelial linings of the heart and arteries, and increase in the thickness of their muscular coats. These are indicated by well-marked symptoms and physical signs, which need not be referred to here.

Associated with Bright's disease, not only may there be temporary attacks of disturbance of vision, but there may also be definite morbid changes in the retina, as observed with the ophthalmoscope, namely, albuminuric retinitis and hæmorrhages. According to Clifford Allbutt, the most characteristic appearances are those due to the presence of numerous whitish or yellowish-white spots around the disc, with hæmorrhagic extravasations into the retina in the same locality. By the increase and union of these patches the disc becomes surrounded by a zone, "the inner line of which is irregularly circular, or melts into the grey interval and the disc itself, while the outer presents salient angles, which correspond with the course of the large vessels."

From the observations just made it will be seen that the great distinction between the albuminuria of Bright's disease and that of surgical diseases of the kidney arises from the fact that in Bright's disease we are dealing with a systemic malady, whereas in the surgical diseases of the kidney the lesions are primarily local.

The question of the presence of toxins in normal urine has been carefully investigated, and has given rise to much controversy; but lately, the poisonous qualities of even healthy urine have been universally admitted, and the term urotoxy has been introduced for the purpose of denoting the relative amount of toxic matter present in healthy as well as in morbid urine.

The investigations conducted by Bouchard are the most complete, and also the most valuable, and to him we are indebted for a method of expressing the comparative toxicity of different specimens of urine. The following quotation may be taken from an article by J. M. French in the *Twentieth Century Practice of Medicine* (vol. vii, p. 779):—

"The unit of comparison, or toxic unit, is the quantity of a given specimen of urine which is required to kill a rabbit weighing 1 kgm., or, as it is usually expressed, 1 kgm. of animal. To determine this quantity, the urine is slowly injected into the posterior vein of a rabbit's ear until death occurs, then calculating from the quantity required and the weight of the animal. In making comparisons with this unit, it is necessary to establish a urotoxic coefficient, which Bouchard defines as the quantity of toxic matter which a unit of weight produces in a unit of time. The urotoxic coefficient of a person is the number of toxic units formed in twenty-four hours by a kilogram of that individual. If, to use his example, it is supposed that a healthy man of 60 kgm. weight excretes 1,200 c.c. of urine, 50 c.c. of which are capable of killing 1 kgm. of animal, then the total 1,200 c.c. would kill 24 kgm. of animal; each kilogram of the man forms in twenty-four hours what would kill 400 gm. of animal, and his urotoxic coefficient is 0·4. The average normal coefficient is, according to Bouchard, 0·464.

"The urotoxic coefficient has been found to vary over a wide range under the influence of diet, exercise, and rest, and in the presence of various abnormal conditions, including nearly all the infections, many functional and organic diseases, and neoplasms."

Investigations in which the presence of ptomains, leucomains, and toxins in the urine are determined come more within the sphere of the pathological chemist and bacteriologist than that of the clinical observer.

Even to describe the methods employed in the extraction of these bodies would require considerable space, and the processes are of such a nature that they cannot be properly conducted outside a chemical laboratory. Those who desire to investigate this subject will find an excellent monograph by Armard Gautier, Professor of Chemistry in the Faculty of Medicine of Paris, entitled *Les Toxines Microbiennes et Animales*, and published by La Société d'Éditions Scientifiques, in which full details are given regarding the separation and action of toxins.

IV. *Anuria.*—Suppression of urine means that the ureter of a working kidney has become completely blocked, while the other kidney has, from some cause, been rendered *hors de combat.* The nature of the injury, or the character of the disease causing this, varies greatly. They may be classified as follow :—

1. Reflex inhibition of the function of the opposite healthy kidney.
2. Impaction of a stone at a previous date, followed by hydronephrosis or atrophy of the kidney on the opposite side to the one recently attacked.
3. Other unilateral diseases of the kidney, such as tuberculous nephritis, pyonephrosis, or congenital absence of one kidney.
4. Bilateral disease of the kidneys, including the various forms of Bright's disease, cystic degeneration, &c.

Suppression of urine may occur as a consequence of reflex inhibition of a disorganised kidney, without the impaction being such as to mechanically close the ureter; the irritation of the calculus may produce suppression of urine. While the kidney with the old-standing lesion has had its function seriously impaired by disease, it may have been doing some work up to the time that the ureter of the other kidney became blocked. But when sudden obstruction occurs in the ureter of the active kidney, not only is the escape of urine from the corresponding kidney checked, but the already impaired action of the other kidney is suppressed by reflex inhibition of its functions. The activity of a diseased neighbour may be suppressed in this way, so also may the work of a healthy kidney be suddenly stopped. Examples of reflex inhibition of the functions of the kidney are numerous. Complete suppression of urine may follow the passage of a catheter, and be succeeded by hæmaturia for some days. Then, again, cases occur of unilateral obstruction, such as is produced by the presence of a calculus in one ureter causing complete anuria, which may last for a considerable time; or, in cases of transitory hydronephrosis from angular insertion of the ureter into the pelvis above, or into the bladder below, or from torsion of the ureter in movable kidney. When the obstruction on one side reaches a certain point, the kidney on the opposite side may fail to act, even while the hydronephrosis continues to increase in size.

Although symmetrical impaction of calculi is not very uncommon, the blocking of both ureters by stones passing downwards simultaneously from their corresponding kidneys must be very rare. Amoden records a case where a large stone, embedded in the trigone area of the bladder, obliterated the orifices of both ureters, and Morris states that a case illustrating the same condition occurred in the Middlesex Hospital.

Impaction of stone at a previous date, followed by hydronephrosis and atrophy of one kidney, is the most common factor in predisposing to obstructive anuria. This question has been fully investigated by Lugueu and Morris. The former writer points out that in an analysis of 30 cases on the side last obstructed, there was obliteration of the ureter in 23 instances, and stone in the kidney in other 7 ; on the opposite side there was atrophy of the kidney or other changes consequent on calculus in 20, occlusion of the ureter in 6, and congenital absence of the kidney in 3. He found only 2 cases of fatal anuria where one kidney was sound. Morris states, as a result of his statistical inquiry, that "in 28 cases of those in my lists, in which the state of the two kidneys is given, the condition of the principal kidney was enlarged in 8, enlarged and congested in 4, small in 2, pyronephrotic in 6, and hydronephrotic in 8. The condition of the opposite kidney was as follows:—No trace existing in 6 cases; marked atrophy in 8, in 2 of which the ureter had become impervious; almost entirely disorganised by calculus in 11; destroyed by a hydatid cyst in 1 ; enlarged in 2."

Other unilateral diseases of the kidney, such as tuberculous nephritis, pyonephrosis, and congenital absence of one kidney, predispose the patient to an attack of anuria. In tuberculous nephritis and pyonephrosis the functional activity of the kidney may be much impaired or totally destroyed; indeed, in tuberculous disease the whole mass of the organ may be replaced by caseous *débris*. In congenital absence of one kidney, the remaining single kidney is very liable to disease—chronic nephritis, renal calculus, tubercular disease, hydronephrosis, pyonephrosis, and abscess being the most common maladies met with. When only one kidney exists, and that an "unsymmetrical" organ, there would seem to be a considerable disposition to renal calculus. Of 12 cases of "unsymmetrical" kidney collected by Mosler, in 9 death was due more or less directly to calculus. Cases of calculus in "single kidney" are also published by Sylvaticus, Rhodius, Jobi, Rokitansky, Rayer, C. Julia Fontenelle, and Everard Home.

Probably the most important bilateral disease which predisposes to anuria is cystic degeneration of both kidneys. Even when the disease is advanced, there may be no symptoms to indicate impairment of the renal functions; but if one ureter becomes even partially blocked, anuria, frequently of a rapidly fatal character, sets in. The same statement also applies to cases of advanced chronic interstitial nephritis or chronic tubular nephritis, but not perhaps to the same degree.

Calculus in one ureter causing complete occlusion, the other kidney being incompetent, leads very soon to complete suppression of urine. Before suppression occurs, the patient experiences, in the region of the affected kidney, pain, which may be limited to the lumbar region, or it may extend along the line of the ureters to the bladder, or down the thighs. This may be associated with considerable vesical irritation and a desire to micturate, even although the bladder is empty or nearly so. The course of events that follow depends upon the nature of the obstruction and the degree to which the function of the kidney on the opposite side is impaired. Calculous anuria may last for many days without the development of symptoms of toxic poisoning, and if the kidney has previously been the seat of hydronephrosis, the period will be more prolonged than if the organ is not so affected. This delay in the development of so-called "uræmic symptoms" is the feature which distinguishes obstructive anuria from suppression of urine due to disease of the renal parenchyma. Indeed, in calculous anuria, death may occur without the occurrence of any of the ordinary symptoms of uræmic poisoning. The early appearance of symptoms of toxic poisoning in the anuria of organic disease of the kidney is explained by the circumstance that, during a long period prior to the actual suppression of urine, there has been a steady decrease in the elimination of waste products, and a gradual storing up of toxins in the system, so that when the kidneys stop working, the poisoned state of the circulation cannot be relieved sufficiently by the complementary action of other organs, such as the skin, the lungs, or the alimentary tract.

Calculous anuria may be divided into two stages—the tranquil term, and the toxic period.

The symptoms of toxic poisoning do not necessarily immediately follow the obstruction to the escape of urine or the total inhibition of the excretion. Sir William Roberts states that when suppression is complete, life is generally prolonged for from nine to eleven days from the onset. In studying the recorded cases, it will be found that, after urine has ceased to flow, the outbursts of indications of toxic poisoning is sometimes delayed only a few hours; while, in other cases, many days may pass without any serious toxic symptoms showing themselves. As a rule, for some days the suppression of urine is unassociated with any serious symptoms. The pulse, respirations, and temperature are normal; the appetite may be good, the tongue clean, and there may be a total absence of digestive disturbance. There may be frequent or occasional desire to micturate, but no urine is passed, except in small quantities and at long intervals. Sometimes a few ounces of urine of low specific gravity, slightly albuminous or even tinged with blood, may be voided; days pass, and the only obvious change is rapidly diminishing muscular strength, with at first occasional, at a later period frequently repeated, muscular twitchings; the mouth, tongue, and palate become dry, and all appetite for food is lost.

It is otherwise in the suppression of urine observed in the various forms of Bright's disease and in zymotic diseases. In the latter, not only is there a stoppage to the excretion of the healthy constituents of urine, but the kidneys, as eliminators of the toxins of disease, are no longer working. It is now well known that in diseases such as scarlatina, pneumonia, cholera, influenza, erysipelas and diphtheria, &c., specific poisons are eliminated by the kidney. It is also recognised that in many organic diseases of the kidney, the functions of the organs are seriously impaired, and excrementitious matter is allowed to accumulate in the tissues and in the blood, and it is a storing up of these waste products of the tissues which produces an intolerance of them, and gives rise to so-called "uræmia."

After non-obstructive suppression, the return of the secretion of urine is slow, the quantity is small, the urine is of a high specific gravity, deeply coloured, and generally albuminous, or may even contain blood, and, therefore, presents a complete contrast to what is observed in cases of obstructive suppression.

After calculous anuria is relieved, the excretion is rapid and copious, and the urine is of low specific gravity, deficient in the constituents of healthy urine, and may contain a trace of albumen and some blood; but if the kidney is otherwise healthy, the urine rarely deposits tube-casts. There is no sudden escape of a large quantity, as in transitory hydronephrosis, but in other respects the character of the excretion is similar. An occurrence sometimes happens which is apt to be misleading. In place of the irritation of the impacted calculus producing an inhibition of the impaired kidney on the opposite side, it may be stimulated to action of an inefficient kind, and a polyuria may be produced. While little more than water is eliminated, such escapes of urine must be carefully watched and not be allowed to draw the attention away from the main and important features of the case, namely, that the waste products are not being eliminated, and that toxic poisoning will soon develop. An experience by no means uncommon is to find uræmic symptoms in persons who are excreting a fair quantity of urine of normal specific gravity, so that while, on the one hand, we may have complete anuria, and an increase of urea in the blood without evidence of toxic poisoning, we may have evidence of toxæmia without diminution in the quantity of urine.

The conditions other than calculus which may cause obstruction to the ureter are very numerous. The following table shows the causes of acquired hydronephrosis in 665 cases:—

	HYDRONEPHROSIS.	
	Double.	Single.
Simple or malignant tumours of pelvic organs causing pressure on ureters, ...	143	41
Stricture of the urethra, enlarged prostate, with hypertrophy of the bladder, ...	195	39
Tumours or abscesses of pelvic organs leading to torsion of the ureters, ...	23	9
Tumours or abscesses of abdominal organs, . .	17	7
Displacement of pelvic organs, causing torsion of ureters, ...	23	20
Bands and adhesions, ...	7	5
Renal calculi, ...	17	51
Displacements of the kidney, ...	1	16
Tuberculous disease of the bladder, ...	13	17
Tumours of the bladder, ...	3	7
Ureter entering renal pelvis at acute angle, . .	6	5
	448	217
Total, ...	665	

One important distinction between the course of events in calculous obstruction and that due to pressure from without is that, while the latter is gradual and almost always produces considerable dilatation of the pelves of the kidney, the former is sudden, and, on one side at least, is unassociated with hydronephrosis. It is unnecessary to discuss in detail the points of distinction between pressure symptoms, as induced by the diseases above enumerated, and the obstruction produced by calculus.

As a general rule, the disease causing pressure upon the ureters is itself so prominent that it is not likely to escape observation. But, while a lesion may be discovered in one of the pelvic organs which may reasonably account for the obstruction, the surgeon must not conclude that a ureter is not also impacted by a calculus. A very striking example of this came under the observation of the writer. A woman with a large uterine fibroid complained of symptoms resembling renal colic, followed by suppression of urine, which lasted, on several occasions, for more than twenty-four hours, after which relief came with the escape of a large quantity of urine of low specific gravity. The conclusion come to was that the hydronephrosis and anuria was due to pressure of the tumour upon the ureters; but, after death, a calculus was found impacted in the left ureter as it passed over the brim of the pelvis. The most important cases to distinguish from calculous obstruction are those in which the flow is impeded by kinking of the ureter, as in movable kidney, or where the impediment arises from angular insertion of the ureter. Transitory hydronephrosis is met with in cases where the ureter is occluded only occasionally. Sudden accumulation and rapid subsidence of the swelling is an important characteristic of transitory hydronephrosis produced in this way; and, while on the affected side the pelvis is still filling and becoming more and more tense, on the healthy side there may be complete inhibition of the function of the kidney. But, while anuria may last sometimes for days, it is hardly ever so prolonged as to endanger the life of the patient.

V. *Evidence of vicarious action of other organs.*—When anuria is continuous, other organs endeavour to take up the task abandoned by the kidneys, but in this they can only succeed to a limited degree and for a short time. The lungs, the skin, and the alimentary tract attempt to do the work, and their vicarious labour is often the first indications of toxæmia. In calculous anuria, the patient may show great desire to sleep. This is often one of the earliest indications of approaching toxæmia, and may be the forerunner of convulsions and the other graver symptoms which accompany them. The respirations are generally slow and laborious, and not infrequently the patient may suffer from paroxysms of dyspnœa, but the breath has no peculiar ammoniacal odour. The pulse is generally full, slow, and wanting in arterial tension; and when the patient does become comatose and the breathing stridulous, considerable cardiac irregularity may be displayed, the strength and character of the pulse varying with the respiratory movements. Very rarely, if ever, is there evidence of venous stasis, as shown by œdema of the feet, diminution in the surface temperature, epistaxis, expectoration of blood-stained mucus, hæmatemesis, or bleeding from the bowel. Examination of the air escaping from the lungs shows it to contain active organic poisons in quantity considerably above what is observed in health. The patient may suffer from profuse perspiration, and the sweat is loaded with effete products and animal toxins, but there is never any ammoniacal or urinous odour from the skin.

Sometimes the skin refuses to act, and very occasionally the surface may become much irritated by the storing up of waste products, and even active cutaneous eruptions may be induced. The mental faculties are seldom impaired, intelligence being preserved to the last, and in pure obstructive anuria convulsions and coma are rarely seen.

CORRESPONDENCE.

DISCUSSION ON PNEUMONIA.

To the Editors of the "Glasgow Medical Journal."

My dear Editors,—I regret that the state of my health did not allow of my accepting the invitation to be present at this discussion, so fully reported in two numbers of the *Glasgow Medical Journal;* and I should not now ask you to intervene, were it not that on two definite topics alluded to in the discussion, there seems to be a risk of my opinions being either misunderstood or insufficiently supported.

1. The one of these which is, perhaps, of minor importance is (in the words of Dr. Adam, *Glasgow Medical Journal*, p. 202) that "Sir William Gairdner used to maintain that it [digitalis] was a poison in pneumonia." No doubt, there is some confusion here; for, as a matter of fact, I have rarely employed digitalis in the treatment of pneumonia; not because I had any special dread of the effects of moderate doses, but because I never met with any evidence or arguments

leading to the expectation of good results. Dr. Adam, in attributing this adverse opinion to me, admits that he has not "any very rational grounds" for giving digitalis; yet (he goes on to say) "I always give it." This absence of "rational grounds" has operated on my mind in exactly the opposite way. I believe it would be almost the truth to say that I have never given digitalis in uncomplicated pneumonia; nor yet, probably, in any other febrile disease, *as such.* What may, however, have been in Dr. Adam's mind, is that I have protested (see *Glasgow Medical Journal,* September, 1878) against the use of enormous doses of digitalis and of veratria as antipyretics in typhoid fever. To this I adhere. Digitalis in doses of 11 to 22 grs., and veratria in doses of one-twelfth of a grain every two hours, *until decided nausea or vomiting ensues,* are poisonous, and would be poisonous, no doubt, in pneumonia as much as in typhoid fever, in which latter disease they have been now abandoned, I believe, even by those eminent German authorities by whom they were recommended before 1878. But that is no reason why digitalis should be regarded as "a poison in pneumonia" in lesser doses; nor do I remember ever saying, or printing, anything which could be so construed.

2. On the other hand, Dr. Ness is amply justified in presenting it as a part of my teaching, founded on experience, that, in a general way, and allowing for exceptions, I "regard opium as a drug of extreme danger in pneumonia." I am aware that men of great eminence have taught otherwise. But, in so representing the case, I am not advocating any theory, but rather am dealing with facts which I know to be true, and which, if true, are such as ought to be in the mind of every practitioner. I have repeatedly seen what can only be regarded as poisonous effects from very moderate doses of opium in certain stages of pneumonia; and (especially towards the crisis) have learned to dread it more than almost any other drug. One case of this kind occurred some years ago in the Western Infirmary, and might well have been published at the time, by way of caution, had I not been anxious to spare the feelings of my excellent assistant, who (if I were to name him now) would be recognised by every Glasgow student of that time as one of the best men in the profession, whose premature death, some years later, was the cause of universal and deep regret. The case in question was this:—A man in the prime of life, and otherwise quite sound, had acute pneumonia of the lower lobe of one lung, which was running an average course, up to (I think) about the sixth or seventh

day from the rigor. I had left him in a fairly good condition, but with considerable pain, which increased during the night. Next morning, he was cyanotic, with slow intermittent breathing, and a very feeble unsatisfactory pulse. His pupils were somewhat contracted. "Has he had any opium ?" I immediately asked. "Yes; one-sixth of a grain of morphia, hypodermically injected, for the pain." The whole scene was such as, I am sure, will never be forgotten by those who witnessed it. My poor assistant was almost thunderstruck, but there was no time to be lost; and by the usual means we just managed to pull the patient through a most perilous crisis, after which he recovered without any relapse or any further incident. Now, this is a fact to be related, apart from all hypothesis. And yet, it is not at all difficult to find a legitimate theory to fit in with, and account for, the fact. In pneumonia, far more than in pleurisy, more even than in bronchitis, the safety of the patient depends upon the respiratory nerve-centres being kept, as it were, wide-awake. The greatly accelerated breathing—"accelerated without being laborious," as I used to point out as a rule—is practically at once the index of the danger, and the means by which Nature compensates for the restricted area of lung within which the air can meet the circulating blood. If then, when the respirations are 60, or even 50 or less in the minute, the respiratory nerve-centres are sent to sleep by a potent narcotic, is it not obvious that the influence exerted at a critical time must be unfavourable ? But opium is of all narcotics, the one that tells most rapidly on the respiratory nerve-centres, and thereby not only on the reflexes dominating the overt respiratory acts, but on all the more latent reflexes which are concerned in what I have constantly termed the "scavenger action"[1] of the bronchial tubes, due to their circular muscles. In the above case (as in others which I have witnessed) all this essential machinery, working at high pressure to keep the patient in life, is brought to a comparative standstill, while the disease is still proceeding, or at least not retreating. Can we wonder at the result ? I give this theory tentatively, not dogmatically; but of the facts I am absolutely sure, as above stated. If strychnine and the older remedy, antimony (as to which I must even now speak with caution), are good for anything in these circumstances, it is because they tend to keep these respiratory reflexes in full operation, which even a moderate dose of opium would paralyse or abolish.

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[1] See this *Journal* for July, 1863, p. 129, and especially p. 135 *ff.*, "On the Action of Expectorant Remedies." The use of the phrase "scavenger muscles," as applied to the circular muscles of the bronchial tubes, is taken from earlier papers "On the Pathological States of the Lung connected with Bronchitis and Bronchial Obstruction," in the *Edinburgh Medical Journal* for 1850-51.

W. T. GAIRDNER.

EDINBURGH, *19th March, 1902.*

Obituary.

JAMES LOUDON, M.D., HAMILTON.

DR. JAMES LOUDON, one of the oldest and best known medical practitioners in the neighbourhood of Hamilton, died at his residence there on 22nd February, in his seventy-eighth year. Born and educated at Strathaven, he came to Hamilton in the early forties as apprentice to Dr. Millar, studied also at Glasgow University and Anderson's College, and when not quite twenty-one — the authorities "did not ask his age" — he graduated M.D. at St. Andrews. Continuing at Hamilton, which, although its population was only a fourth of its present 40,000, was more of a centre then than now, he, after some years, became medical officer for collieries and ironworks near Motherwell, Holytown, and Larkhall, and latterly also for Earnock Colliery. He thus came to have a large and lucrative practice, his success being maintained and promoted by his shrewdness, reticence, and genial manner. All these appointments, except part of that at Earnock Colliery, he had given up many years ago, but at the time of his death he had long been medical officer of health, police surgeon, and medical officer for the local combination fever hospital and for the poorhouse.

Dr. Loudon's energies, however, were not bounded by his profession. He took great interest in education. "Coming out" at the Disruption in 1843, he was early associated with the direction of St. John's Grammar School under the auspices of the Free Church, and throughout his life maintained an active interest in this school. He was a member of the first School Board in Hamilton, and for the last quarter of a century its chairman. Four years ago he attained his jubilee as an elder of St. John's Free Church, and was presented with his portrait by the congregation. He associated himself with the Volunteer movement at its inception, and as far back as the early eighties promoted ambulance work in connection with the Volunteers and with the collieries.

Such energy, an upright life, and many sterling qualities were bound to eventuate in a successful practice and widespread influence; and the esteem in which he was held was manifest by the large and representative gathering that paid the last tribute to him. Failing health during the last five years had largely withdrawn him from his numerous activities, and caused him to winter abroad. He died after several apoplectic attacks. His son, Dr. J. Livingstone Loudon, who has latterly mostly conducted the practice, succeeds to it.

Two points in Dr. Loudon's career are of special interest to the medical world. When a lad at Strathaven, he took what was then called "typhus" fever, but what he afterwards recognised as enteric, and was treated—so long ago as sixty years—by frequent cold baths. Being family medical attendant on the Livingstone family at Blantyre, he became intimate with David Livingstone; and when the explorer's remains were brought from Africa to London, Dr. Loudon was associated with Sir Wm. Ferguson in the autopsy, and helped to identify them by the false joint in the humerus which resulted from the well-known adventure with a lion.

CURRENT TOPICS.

GLASGOW ROYAL INFIRMARY.—The managers have appointed Dr. James Maxtone Thom to be Superintendent of the Infirmary in room of Dr. Moses Thomas, who retires in May after a faithful service of thirty-five years. Dr. Thom has been medical officer of Barlinnie Prison for the last six years, and was previously engaged in practice at Crieff.

ROYAL INFIRMARY.—The following house appointments have been made for the six months from 15th April to 15th October, 1902:—

House Physicians.—Keith Robertson, M.B., assistant to Dr. M'Vail; D. M'Lure Cowan, M.B., assistant to Dr. Middleton; Wm. Robertson, M.B., assistant to Dr. Lindsay Steven; Ernest H. Cramb, M.B., assistant to Dr. Monro; John Allan, L.R.C.P., &c., assistant to Dr. Allan.

House Surgeons.—George H. Clark, M.B., assistant to Dr. Clark; Andrew Young (unqualified), assistant to Dr. Barlow; Frank J. Lochrane, M.B., assistant to Dr. Adams; A. S. Wells, M.B., assistant to Dr. Newman; Andrew Currie. M.B., assistant to Dr. Knox; John M'Intyre, M.B., assistant to Dr. Pringle; Ludovic Hill, M.B., assistant to Dr. M'Lennan.

Gynæcological Department.—J. T. Griffiths, L.R.C.P., &c. (non-resident), assistant to Dr. Kelly.

ROYAL INFIRMARY.—The Annual Dinner of Past and Present Residents was held in the Windsor Hotel on Wednesday, 26th February. The chairman and guest of the evening was Surgeon-General James Jameson, C.B., M.D., late Director-General of the Army Medical Service. The toast of the Royal Infirmary was proposed by the chairman, who was a resident in that institution in the fifties. The reply was made by Dr. Thomas, who was received with great enthusiasm. Dr. Workman, in a humorous speech, proposed the Past and Present Residents, to which Dr. Bruce Goff, a past resident, and Dr. Harrington, the present senior resident, responded. The Faculty was proposed by Dr. A. N. M'Gregor, and responded to by Dr. Finlayson. Dr. J. W. Allan, in proposing the chairman, outlined the distinguished career of Surgeon-General Jameson in various parts of the world, where he did excellent service before he became head of the Army Medical Department. The chairman, in reply, made a very important and much appreciated statement with regard to the criticisms which have been passed on the Department which until lately he administered. Among those who contributed to the enjoyment of the evening may be mentioned Dr. Wallace of Greenock, who graduated M.D. in 1850, and who sang two songs, and Dr. Fraser, of Falkirk, who gave a solo on the bagpipe.

ST. MUNGO'S COLLEGE FACULTY OF MEDICINE.—The closing meeting of the winter session at St. Mungo's College, and the distribution of the medals and certificates of honour, took place on Thursday, 27th March, in the presence of Mr. Hugh Brown, President of the College, the governors, and members of the teaching staff. In the course of his remarks, the President alluded to the losses sustained by the College in the death of Dr. Campbell Clark and the resignation of Professor Marshall. It was announced that a collection of materia medica specimens would henceforth be available for the use of the students, and also that a library of medical works had been bequeathed to the College by the late Mr. R. T. Kent, who was formerly the Professor of Anatomy.

The following medals were awarded:—

Physics—John Macarthur. *Chemistry*—William D. Mackay. *Zoology*—John Macarthur. *Anatomy* (*Senior*)—Jas. Taylor (medal and president's prize). *Anatomy* (*Junior*)—Adam Cubie. *Surgery*—Alexander Allan. *Physiology*—Thomas J. C. Evans. *Physiology* (*Practical*)—Thomas J. C. Evans. *Clinical Surgery*—John W. Isbister. *Practice of Medicine*—Alexander Allan, Henry R. Helsby (equal). *Clinical Medicine*—John W. Isbister. *Materia Medica*—Evan R. Evans. *Pathology*—Evan R. Evans. *Ophthalmology*—Andrew Young. *Gynæcology*—Evan R. Evans.

ANDERSON'S COLLEGE MEDICAL SCHOOL.—The winter session of Anderson's College Medical School was formally closed on Friday, 28th March, when the prizes were distributed by Lord Provost Chisholm. There was a large attendance of students and of the public. Mr. A. Malloch Bayne, President of the School, occupied the chair.

The Lord Provost briefly addressed the meeting. He said that as Lord Provost of the city he was always delighted to meet with young men who were bringing themselves under such influences as would make them worthy and noble citizens. To societies and institutions he often applied this test—What kind of citizens are you making? Are the influences you are exercising upon those under your charge of a kind that will make or unmake men, that will make them nobler and better, or make them selfish and self-contained? If ever he had feelings of regret laced with streaks of envy, it was when he was face to face with such a body of young men as those before him. To be still young, and yet to be men; to have all the ardour and impulse and enthusiasm of youth, and yet to be conscious that they had the equipment and power and strength of manhood—that was a position which one immersed in the toil and struggle, and under the heat and burden of the day, might very well be permitted, for a little at all events, to envy. It was not for him to enlarge on the nobility and the beneficence of that field of effort and enterprise which they had chosen as their future lot. They had already shown their high appreciation of it by the fact that they had made it the object of their choice; but they would allow him to say, as one drop in the great cloud of witnesses by which they were surrounded, that they, who merely stood outside, looked on with affection and admiration—affection for the men, and admiration for the efforts and triumphs of the men who had been engaged in the fields of medical and surgical science, and who had, by their efforts and labours, produced results so marvellous in themselves, and had wrought such marvellous and delightful achievements for the relief of the suffering and sorrows of the world. He congratulated them on having made this field of effort their choice. He asked them to believe that the highest field of honour was the field of service. He was most entitled to, and, in the long run, most received, the honour of his fellows and the honour of the world who most of all served his common kind; he was remembered more than kings, or conquerers, or millionaires. If he were to ask the name that was best remembered in connection with the Crimean War, he was sure that thousands who had forgotten the names—if they ever knew them—of General Simpson and Marshal St. Arnaud, remembered the name of Florence Nightingale. He instanced this merely to illustrate the statement that it was more in the field of service that in any other field that true honour was to be found. He understood that a number of the gentlemen to whom he had had the honour of presenting medals, prizes, or certificates, or all three, had, according to the phrase, finished their studies. He wished to say that he hoped they had not finished their studies. He hoped that none of them imagined for a moment that when they had left the college or the university, with a string of letters behind their names, they had finished their studies. Did they remember that old and picturesque Olympic race in which the runners had each put into his hand a lighted taper, and the reward was not to him who, fleet-footed, first reached the goal, but to him who reached it with his torch still alight, still ablaze? He asked them to believe that it was when they kept burning right on to the end of their course the torch of a love of study, a love of investigation, of the pursuit of knowledge, that they would be truly entitled to that honour which was the highest of all, to be known and loved and remembered by all with whom they had come in contact.

The following medals and prizes were awarded:—

Anatomy—(Malcolm Kerr Bursary) William N. Turner, Glasgow. *Physics*—(medal) William D. Oswald, Glasgow. *Zoology*—(medal) John A. Doctor, Glasgow. *Physiology*—(medals) Wm. MacIlraith, Milngavie; Alex. R. M. MacIlraith, Cathcart (equal). *Materia Medica and Therapeutics*—(medal and first prize) Robert Austin, Glasgow; (second prize) John Wylie, Glasgow. *Practice of Medicine —Seniors*—(medal and first prize) William N. Turner, Glasgow; (second prize) John Guthrie, New Zealand. *Juniors*—(first prize)

John W. Smith, Glasgow; (second prize) Peter L. Sutherland, Glasgow. *Surgery*—(medal and first prize) John Cross, Hamilton; (second prize) William Bates, Glasgow.

Glasgow and West of Scotland Branch of the British Medical Association.—The winter meeting was held, by the kind permission of the Faculty of Physicians and Surgeons, in the Faculty Hall, Glasgow, on the 28th February.

The retiring President, Dr. Thos. Graham, of Paisley, introduced as his successor Dr. Wm. Findlay, Glasgow, who had been during the previous year in the position of President-elect.

The annual report (see below) and the financial statement were submitted, and approved as satisfactory.

The report of the Medico-Ethical Committee of the Branch was submitted by the convener, Dr. Goff, and approved; and, on the nomination of that Committee, the meeting unanimously re-elected to the Committee the three members falling to retire, under rule, at this date, viz., Sir William Gairdner, Dr. Napier (Crosshill), and Dr. Fraser (Paisley).

Certain office-bearers were then elected. The following is the list for the ensuing year:—*President*, Dr. Wm. Findlay; *President-elect*, Dr. Eben. Duncan; *Vice-Presidents*, Drs. D. C. M'Vail and Thos. Graham; *Hon. Secretaries*, Drs. J. H. Nicoll and James Hamilton; *Representatives on Council of British Medical Association*, Drs. Bruce Goff and Freeland Fergus; *Representative on Parliamentary Bills Committee*, Dr. Bruce Goff; *Members of Council of Branch*, Drs. J. W. Allan, A. Johnston, J. C. Syson, Wm. Watson, Wm. R. Sewell, J. C. M'Vail, John A. Kennedy, R. S. Penman, and John Stewart.

Annual Report of the Branch (*1901*).—The year has been an active one in the affairs of the Branch. During the earlier part two special meetings were held for the consideration of the report of the Constitution Committee of the Association, the action of the General Medical Council in the matter of the sale of drugs and poisons, and the professional relations of medical practitioners with friendly societies.

The summer meeting took the form of a joint gathering of the Scottish Branches in the University, followed by dinner in the Glasgow International Exhibition.

The membership of the Branch continues to steadily increase, standing at 325 at the end of the year 1901, and the financial position is sound, the accounts, audited by Drs. Alex. Miller and John Stewart, showing a balance of £19, 5s. 5d. to the credit of the Branch.

Special Meeting of the Branch.—Following the annual business meeting there was held a special meeting of the Branch called by the Council under the bye-laws on receipt of a requisition signed by certain members.

The President, Dr. Wm. Findlay, occupied the chair, and the following motions were, after discussion, adopted:—

1. "That this Branch of the British Medical Association, recognising the inadequacy of the direct representation of members on the General Medical Council, and the exceptional nature of the penal powers possessed by that Council, hear with satisfaction, on the authority of Mr. Fowke, that the Council of the British Medical Association is preparing a Bill for presentation to Parliament dealing with these questions, and resolves to support any such Bill in so far as it supports the principles of increased direct representation on, and modification of the penal powers of, the General Medical Council, and instructs the representatives to the Council of the British Medical Association to give diligence to the matter and report to the Branch."

2. "That the Secretaries of the Branch be instructed to ascertain the views of the other Scottish Branches of the British Medical Association as to concerted action for consideration of the question of the constitution and powers of the General Medical Council, and more especially with reference to increased direct representation and modification of penal powers, with a view to legislation."

THE SOCIETY OF MEDICAL PHONOGRAPHERS.—This Society will hold its next annual shorthand examination early in May, 1902. Two prizes will be offered, each of the value of £5, one for first-year students and one for students of more than one year's standing. The competition is open without fee to any registered medical student in the United Kingdom who has not taken a first prize at one of the Society's previous examinations. It will be held simultaneously in London, Edinburgh, Dublin, and at any provincial medical centre in the United Kingdom at which not fewer than three candidates shall offer themselves. Intending candidates should send their names as early as possible to Dr. P. G. Griffith, Bonhams, Farnborough, Hants, who will furnish them with a detailed prospectus of the examination. The latest date for reciving entries will be 15th April, 1902.

MEETINGS OF SOCIETIES.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1901-1902.

MEETING IV.—13TH JANUARY, 1902.

The President, MR. H. E. CLARK, *in the Chair.*

I.—CASE OF LYMPHATIC LEUKÆMIA

BY DR. ALEX. NAPIER AND DR. JOHN ANDERSON.

Mrs. L., æt. 43, married, five children, of whom three are living, was admitted to the Victoria Infirmary on 11th May, 1901, and died there on 3rd June following. Her illness began, without obvious cause, about five months before; the first sign noticed being enlargement of the lymphatic glands in the right side of the neck. Then, in the following order, within two months, the glands of the left side of the neck, right axilla, left axilla, right groin, and left groin also became enlarged. Patient became progressively weaker; digestive disorders, dyspnœa, and swelling of the abdomen developed.

Condition on admission.—Patient appeared a rather stout and well-nourished woman; there was no very evident indication of anæmia; menstruation was regular. The largest gland masses were those in the anterior triangles of the neck, which were as large as hen's eggs. The liver was somewhat enlarged, the spleen very greatly. A thick petechial eruption covered the lower part of the abdomen and the legs; the latter were slightly œdematous. The urine showed a trace only of albumen. The temperature remained subnormal throughout.

The blood was twice examined fully, with similar results. The leucocytes were estimated at 143,000, the red corpuscles at 3,000,000—a ratio of about 1 in 21. Lymphocytes greatly preponderated, and many of them were of large size, 86·5 per cent; large mononuclear leucocytes, 4·5 per cent, a slight absolute increase; polymorphonuclear neutrophil leucocytes, 6·4 per cent (absolute number about 10,000 per mm.); eosinophil cells were very few in number; myelocytes and nucleated red corpuscles were observed; hæmoglobin, 30 per cent.

Before death the spleen enlarged very greatly, and extensive œdema and effusion into the pleural cavities developed.

Post-mortem examination showed that, in addition to the external lymphatic glands, all the internal ones and the tonsils were hypertrophied, and to some extent also the scattered lymphoid tissues of the intestines, œsophagus, trachea, and bronchi. The spleen was greatly enlarged, weighing 56 oz., and was adherent to adjacent structures. The increase was principally of the pulp, the sinuses and tissues of which were full of lymphocytes; the Malpighian bodies were not markedly increased in size. The liver was enlarged considerably, fatty, and the portal connective tissue was crowded with lymphocytes and increased in extent. The other organs showed considerable infiltration with lymphocytes. The red bone marrow was increased in amount and contained great numbers of lymphocytes.

II.—CASE OF PERNICIOUS ANÆMIA.

By Dr. Alex. Napier and Dr. John Anderson.

Mrs. S., æt. 31, was admitted to the Victoria Infirmary on 31st October, 1901. Patient was extremely anæmic; complained principally of weakness. Up to the present illness her health was very good. She was confined of her sixth child about four months ago. During the whole pregnancy she suffered from vomiting, which was unusual; and about the middle of the pregnancy weakness, loss of appetite, and pallor developed, and became progressively worse. Labour was quick and easy, but recovery after it was very imperfect. She was unable to nurse the child, which, though apparently healthy at first, soon wasted and died.

Condition on admission.—Patient was very pale and of a yellowish tint; not emaciated. The heart was dilated, and thrill and murmurs were detected in the mitral area and at the base. The tongue was dry and glazed, the teeth necrotic, bowels constipated. The urine showed only a faint trace of albumen; temperature normal. The liver was considerably and uniformly enlarged, and tender to touch. The blood was pale and watery; hæmoglobin under 20 per cent: red corpuscles, 8 per cent (400,000 per c.mm.); poikilocytosis pronounced; nucleated red corpuscles of normoblastic and also megaloblastic type present in considerable number. Patient was practically moribund, and died on 3rd November.

Post-mortem examination showed the characteristic picture of pernicious anæmia. The heart was dilated and fatty, but the curtains of the valves were healthy. The liver was enlarged, and showed marked hæmosiderine reaction; the spleen and bone marrow gave this reaction also, but to a much less degree. The spleen was enlarged and soft, and contained large numbers of broken-up red corpuscles and many nucleated red corpuscles. The bone marrow was yellowish-red in colour and diffluent, the yellow marrow extensively replaced by red, and the bony trabeculæ and walls thinned; the red corpuscular elements were greatly increased in number, and were of the forms seen in the blood.

Professor Muir remarked that the cases appeared fairly typical of the two diseases, agreeing with the now generally accepted classification according to the condition of the blood. In regard to the case of lymphatic leukæmia, the increased proportion of lymphocytes in the blood and the infiltration of the tissues by them were quite typical. The infiltration of the bone marrow by these cells, and the replacement of the proper tissues by them, he regarded as the cause of the anæmia, which advances more rapidly in this than in the myelogenic form of leukæmia. But the presence of myelocytes in the blood in such numbers (stated at 1 per cent) was unusual, and he wanted to know if the nature of the cells regarded as such had been tested by the reaction of the granules.

Dr. Anderson said he would ascertain this point more fully.

III.—OPERATION FOR PTOSIS BY ADVANCEMENT OF THE OCCIPITO-FRONTALIS MUSCLE AND TENDON.

By Dr. Freeland Fergus.

Dr. Fergus showed a case in which, for the relief of ptosis, he had advanced a vertical strip of the occipito-frontalis muscle. Before operation, the little patient, a boy aged about 7 years, had congenital ptosis affecting only one side. The operation which Dr. Fergus performed had, he said, been already described by him in the *British Medical Journal* for 1901, and, therefore, no further description of it need be given.

It would be observed by the gentlemen present that in ordinary fixation both eyes were equally open, the margin of the superior eyelid on each side corresponding approximately with the upper margin of the cornea. Before operation the eyelid on the affected side completely covered the cornea. The patient had complete power of opening and closing the affected eye. During sleep the eye was kept shut.

Since doing his first operation Dr. Fergus had looked into the literature of ptosis operations. The only one at all comparable with his own was Kunn's. Their incisions entirely differed from each other, and while Kunn stitched a strip of the occipito-frontalis into the tarsus, Dr. Fergus stitched his into the substance of the eyelid quite close to the ciliary margin.

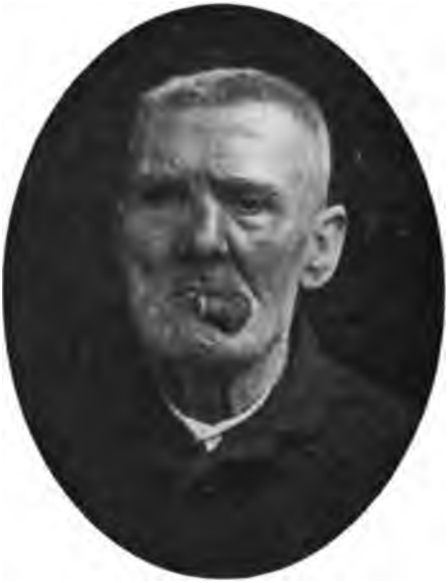

FIG. 1.

IV.—EPITHELIOMA OF LOWER LIP: EXCISION AND RESTORATION BY TRENDELENBERG'S OPERATION.

By Dr. James Laurie.

J. M'C., æt. 73, was admitted to the wards of the Greenock Infirmary on 4th February, 1901, suffering from a papillomatous growth of the left lower lip. The growth extended from slightly beyond the middle line to the angle of the mouth. He says it began two years ago, at the outer angle, as a pimple, and gradually spread until it reached its present size. There was no pain, nor were the glands involved.

Operation.—The lip was split right down through all the tissues of the chin to the bone. An incision from the angle of the mouth was carried out on the cheek for an inch and a half, cutting skin and muscle, but leaving intact the buccal mucous membrane. From the angle of the mouth an incision was made, curving sharply downward to meet the first at the chin, and the whole growth removed. The skin of the chin and that of the cheek were easily approximated, and by incising the buccal mucous membrane it formed a covering for the lip.

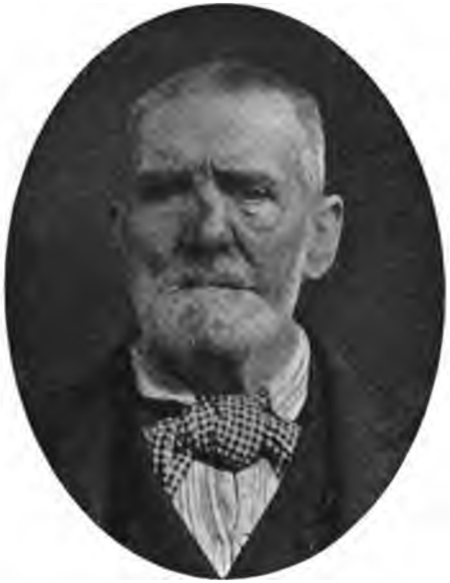

FIG. 2.

Finally, the wound in the cheek was closed, and the parts covered with a collodion dressing. The wound healed by primary union. Silkworm gut was used for sutures. The photograph gives a very good idea of the growth, which, on microscopic examination, proved to be an epithelioma.

V.—SPECIMENS.

A. BY DR. JAMES LAURIE.

Dr. Laurie showed as card specimens:—

1. An ulcer of the ileum which had perforated. The naked

eye characters were those of tubercular ulcer. A section showed nothing characteristic of tubercle, but only sloughing and inflammatory infiltration in a Peyer's patch.

2. A calculus which was removed by suprapubic cystotomy from a woman, æt. 63. The calculus measures 2½ inches in its longest diameter, and is almost globular in shape; it weighed, when dry, 4¼ oz. Patient made a good recovery.

B. BY DR. R. S. THOMSON.

Dr. A. R. Ferguson showed for Dr. Thomson a specimen of the ileum and caput cæcum coli passed *per anum* during spontaneous cure of intussusception. The following is the history of the case:—

1. R. M'G., æt. 34 years, was an ironturner, working in Parkhead Forge. Patient had always been healthy, and his bowels, as a rule, were regular. He was very intemperate, spending generally 11s. a week on whisky and beer, but was never drunk.

About the middle of May, 1901, he suffered from pains in the right lower abdomen, which got gradually worse and prevented him from sleeping, but not from going out to work. Stools were thin and dark, and continued so for nearly two months. He consulted no one, but took occasional doses of castor oil. He had no vomiting. About the 10th or 12th July, he first saw blood in his motions. He would have a motion three times on an average in the twenty-four hours, and would pass two or three tablespoonfuls of bright blood at each. This continued till the 28th or 29th, when he was told that he was suffering from internal piles. He stayed off work, but did not lay up. Still there was no vomiting. Then the blood in the motions became dark; frequency of motions remained about the same, but they were very little in quantity, and mostly wind and blood. He suffered then from severe abdominal pains, for which he had hot poultices applied continually. No history of any localised swelling or tympanites.

At the end of a fortnight, although no better, he resumed work. During this period he had frequent desire to go to stool, but very little came, except wind and blood, and that with a good deal of pain. The pain was worst at night, and was felt all over the abdomen, which was not swollen except at intervals, until flatulence was discharged. Still no vomiting. He gradually got worse, until he had to leave off work on 18th September. He went to bed and was treated for inflammation of the bowels and kidneys. The urine had decreased in quantity, and on the 23rd there was suppression and unconsciousness. After this he improved gradually; bowels still confined, but no blood; occasional vomiting. Ten days later, while at stool, he felt sick, passed a large quantity of blood, and fainted. Was given turpentine internally, and the bleeding gradually stopped. By the end of three weeks he was outside again, and back to ordinary diet, and was ordered to Dunoon Home. His motions were still the same; thin, small in quantity, and coffee-like in colour. He remained practically the same until he came down here, and I was called in to see him on 9th November, when I found him with a temperature of 101°, vomiting, abdomen very much distended with wind, constipation, intense anæmia, weight about 6 or 7 stones. It was not possible to get any information from percussion or inspection of the abdomen, except that there seemed to be a localised swelling in the right iliac fossa, which also gave a tympanitic note. Digital examination of the rectum revealed nothing. A 12-inch 9-calibre O'Beirne's tube was then passed, and, meeting with no obstruction, I gave an enema of turpentine, olive oil, and warm soap and water; of this he was only able to take in about 2 pints, and this returned almost as it went in. He had been given a dose of castor oil that morning before I saw him, and as this was giving him great pain, I put him on opium. The obstruction was complete, no fæces passing at all. Turpentine stupes alleviated his distress. On the 15th he passed dirty-coloured urine, with fæcal odour, accompanied with flatus. The swelling in the right iliac region had disappeared. His condition improved as the flatus passed away, and pain had altogether left him. Thickening was to be felt in the right iliac fossa. The bladder was washed out daily. On the morning of 23rd November he was seized with sudden pain, and on going to stool passed the specimen together with a streak of blood. His urinary condition now improved, and the bowels moved regularly three or four times daily. The general improvement was gradual, and at the beginning of the present month he was able to walk a few steps. From that time he improved rapidly (the bladder being washed out regularly), temperature normal till the 11th inst., when he suddenly became collapsed, the bladder condition being the evident cause, as on passing the catheter liquid fæces came out, and he recovered when the bladder was washed out. He is now improving again.

2. A specimen of small intestine which had suffered complete

transverse rupture. It was taken from a man who was struck on the back by the buffer of a locomotive. He died three hours after the accident. The rupture was situated 26 inches from the pylorus.

C. By Professor Muir.

Professor Muir showed, as a fresh specimen, a large tumour growing from the left innominate bone; it occupied about half of the pelvis, and displaced the viscera to one side. It was a chondroma showing a great deal of myxomatous degeneration and secondary septic infection by staphylococcus pyogenes albus. There were numerous abscesses in the kidneys, and a few in the heart wall.

GLASGOW SOUTHERN MEDICAL SOCIETY.

Session 1901-1902.

Meeting X.—23rd January, 1902.

The President, Dr. John Stewart, *in the Chair.*

DEMONSTRATION OF SURGICAL CASES.

By Dr. R. H. Parry.

In the Board Room of the Victoria Infirmary, Queen's Park, Dr. Parry showed the following group of surgical cases, viz.:—Case in which there had been (1) rupture of the thoracic duct; (2) excision of stricture of urethra and immediate approximation of divided ends of urethra; (3) excision of tongue and half of lower jaw for carcinoma of floor of mouth; (4) excision of tuberculous glands from anterior and posterior triangles of neck through an incision in hairy scalp; (5) cerebral tumour (glioma sarcoma) removed by raising a large osteoplastic flap; (6) injury to fifth cervical nerve, paralysis of deltoid, biceps, brachialis anticus, and supinator longus muscles; (7) idiopathic dilatation of colon, in the treatment of which the ileum had been joined to the rectum; (8) rupture of the gall-bladder, escape of pus into the peritoneum, followed by diffuse purulent peritonitis; (9) idiopathic dilatation of stomach, and removal of large stricture of lower end of ileum; (10) cases illustrating common errors in the diagnosis of lesions on the right side of abdomen.

At the close of the demonstration *Dr. Stewart* moved a hearty vote of thanks to Dr. Parry.

MEETING XI.—6TH FEBRUARY, 1902.

The President, DR. JOHN STEWART, *in the Chair.*

DISCUSSION ON THE MANAGEMENT OF THE THIRD STAGE OF LABOUR.

In introducing for discussion the management of the third stage of labour, *Dr. J. K. Kelly* remarked that the process naturally divided itself into the separation and then the expulsion of the placenta. Proceeding, he discussed the various theories held regarding nature's method of separation, and shortly described the plan associated with the name of Credé. After separation had taken place, Dr. Kelly recommended friction of the fundus of the uterus through the abdominal wall, in order to strengthen the contractions and promote expulsion. When separation had not taken place within a reasonable time, he adopted the plan of inserting the hand into the uterus.

Dr. Munro Kerr dwelt on the importance of giving time for the placenta to detach itself, waiting in some cases as long as thirty minutes. Separation was known by bulging of the lower part of the uterus, by the tapering of the fundus, and by the descent of the cord, the latter having been tied with tape at the vulva as an indicator. He concluded by discussing the theories held regarding the process of separation of the placenta.

Dr. E. A. Gibson dwelt on the necessity of time in the management of the third stage. When there was undue hurry, and when pressure was applied, there was risk of severe hæmorrhage. He did not recommend the giving of ergot in the third stage of labour.

Dr. W. K. Peden insisted on the necessity of giving time in the third stage, and adversely criticised the application of pressure to the uterus before the placenta had separated.

When separation was unduly delayed, the best method of treatment, in his opinion, was to insert the hand into the uterus and ascertain the cause of delay.

Dr. James Hamilton remarked that his policy was not to delay longer than fifteen minutes for separation and expulsion. At the close of this period he made traction with his hand in the uterus. He was not an advocate of delay in the management of third stage of labour.

Dr. Alexander Miller said that he only used Credé's method when the placenta had separated and was lying in the lower part of the uterus.

Dr. Robert Jardine advocated a delay of fifteen minutes in order that the placenta might separate. During this interval he steadied the fundus of the uterus with his hand to prevent relaxation and the filling of the uterine cavity with blood. Separation having taken place, and the placenta lying in the vagina, his method was to make traction on the cord. In cases of adherent placenta, he introduced his hand and separated the placenta himself.

Dr. Malcolm Black said that he never inserted his hand into the uterus unless the circumstances strongly demanded it, He used Credé's method only after separation had taken place, and separation was known by the distance travelled by the cord ligatured at the vulva.

After some other members had taken part in the proceedings, the *President* concluded the discussion, and expressed the opinion that the third stage of labour was the most important of all. After separation of the placenta his practice was to use Credé's method, taking great care that no part of the membranes was left behind.

REVIEWS.

A Treatise on Orthopædic Surgery. By ROYAL WHITMAN, M.D. London: Henry Kimpton. 1901.

THE author's view of orthopædic surgery is that it deals with "those affections that lead to deformity, or that otherwise impair the usefulness" of the "human machine," and he has endeavoured in this volume to furnish the reader with an account of them, followed by a clear exposition of their treatment.

The subjects include disease and deformity of the spine, joint diseases in general, with special chapters on the hip, knee, ankle, and joints of the upper extremity, deformities such as coxa vara, genu valgum, talipes, those following infantile paralysis, &c. From the above, it will be seen that the range of subjects is a wide one, and it may be said at once that the author has accomplished his task satisfactorily.

Some of the sections are well done (*e.g.*, coxa vara), while others (*e.g.*, spina ventosa) are rather brief. As one would expect, the ailments are chiefly those of children; but adults are included in such subjects as tuberculous wrist, painful conditions of the great toe, &c. An example of the full way in which treatment is gone into will be found in the section dealing with tuberculous disease of the spine.

We have noted a few slight errors which will doubtless be remedied in a future edition. As examples of these may be mentioned the statement on page 42, that the gait and attitude of congenital dislocations of the hip are accompanied by the symptoms of bone disease; and, again, the want of agreement between Fig. 41 and the description on page 71.

The author is to be congratulated on the production of such a handsome and useful work on the subject, and we are sure that it will be found of use to both the general practitioner and the surgeon.

Report of the Work of the Edinburgh and East of Scotland South African Hospital. Edited by David Wallace, C.M.G., F.R.C.S.Edin., and Francis D. Boyd, M.D., F.R.C.P. Edin. Edinburgh: Oliver & Boyd. 1901.

We can unreservedly congratulate Drs. Wallace and Boyd on the elegant and interesting volume they have set before us. Everything has been done in the way of fine paper, clear printing, copious illustration, tasteful binding, and pages with plenty of margin, to make the book worthy of the occasion.

Notwithstanding what the authors say in explanation, we cannot but feel that two months was a long time for it to take to get an hospital out to South Africa, and put in such a condition as to be able to receive fifty patients. If to this we add that it was nearly three months more (or five months from the date of embarkation) before all the huts were completed, it will be seen that there was some ground for the feeling that the Edinburgh Hospital was long in getting its equipment up to Norval's Pont, and in completing the erection of its buildings. At a time when there was a great demand for hospitals far up the country, it did seem important that the equipment should be such as should be easy of transport, and the buildings such as could be erected in the smallest possible time, mainly by unskilled labour. As things have turned out, however, we have no doubt that Surgeon-General Wilson, and those at present in charge of the hospital at Norval's Pont, have had reason to rejoice that the buildings are so substantial, and that the whole work has been done in so thorough and durable a fashion.

The experience of the Edinburgh Hospital in regard to the admission of patients was such as was not uncommon among the voluntary hospitals working in South Africa. There was scarcely one of them but could have done twice as much work as it actually accomplished, if only the military hospitals had not had the "first call" on the cases arriving by convoy or hospital train; and the relation of the local P.M.O. to the military hospital always ensured the enforcement of that "first call," because all cases arriving at the station had to be reported to him. It is explained that the difficulty at the Edinburgh Hospital depended on the small number of beds at the disposal of the military authorities. "It was heard, unofficially, that it was exceedingly improbable that the military authorities would send a smaller convoy than 93 to 96 patients, that being the complement of an hospital train. It became apparent, therefore, that to work a 100-bed hospital, taking in 93 to 96 patients at a time, was impossible." Yet, the Scottish Hospital at Kroonstad had about the same difficulty in getting its beds filled, although it had accommodation for 300 patients, and equipment for 520 (the tents for the remaining 220 patients never being erected, as they could not be used). While this was the state of matters, the military hospital at Kroonstad (No. 3), a half section of a general hospital, and therefore normally of the capacity of 260 beds, was made to serve for about 700 patients. It looked as if the officials of the military hospitals were anxious to show that they were quite able to undertake the whole of the hospital work, and did not need the assistance of the voluntary hospitals which had been sent out.

In two respects, the Edinburgh Hospital showed itself much in advance of the military hospitals, and also of most of the voluntary hospitals, viz., (1) it was lighted throughout by electric light, and (2) it obtained uncontaminated water by boring to the depth of about 100 feet below the surface, and putting in a pump. The latter was a most important particular, in a country where water-contamination was so general and so disastrous. The fact that they got the water from such a depth did not prevent their use of the Pasteur-Chamberland filters, and it is noteworthy that, while in the other hospitals where river water was employed, great difficulty was experienced in using these filters, because they rapidly became blocked with the all-prevailing dust, the hospital at Norval's Pont appears to have experienced no difficulty in their use.

The Edinburgh Hospital had long to wait before the staff had much experience of gun-shot wounds, for although it received its first sick convoy on 27th May, it is stated that, from that date to 26th July, only three cases of bullet-wound had been treated as in-patients. The total number of surgical cases treated as in-patients were 161, of which 75 were bullet or shell injuries. Among these were the usual array of cases where the "kindly" Mauser bullet had passed through important anatomical structures, apparently without doing any damage, cicatrices of almost microscopic fineness being the only evidences left of the injury. The details are given of a very interesting case where nearly the whole body of the lower jaw was carried away by a piece of shell, and this is illustrated by six photographs, showing the condition at various stages of repair, the last of them showing a really excellent result. In another case of much interest, a Mauser bullet was removed from the interior of the head of the fibula by gouging, and at a subsequent date it was found necessary to ligature the femoral artery in Scarpa's triangle, aneurysm of the popliteal artery having formed, evidently the result of an injury to the artery by the bullet as it crossed the popliteal space.

Dr. Boyd presents us with a careful study of the cases of enteric fever treated in the hospital, 156 in number. The mortality over all was 10·7 per cent, which must be regarded as low, when it is considered that the patients were nearly all young adults of from 20 to 25 years of age. There were 39 cases registered as simple continued fever, and if these had been regarded as mild cases of enteric (as was frequently done), the mortality would have been reduced to 6·6 per cent. Dr. Boyd speaks of the frequency of the occurrence of thrombosis as a complication of enteric, and records a case in which it appears to have been accountable for the production of a somewhat grave hemiplegia. We are disappointed with his statements and opinions as to the value of inoculation as a preventive of enteric, or as modifying the severity of the attack. He says—"Amongst the staff of the hospital, of the 58 inoculated, 9 developed enteric fever. Of those 9, 1 proved fatal, death supervening on the twenty-fifth day from a sudden attack of cardiac failure. . . . Of the remaining 8 cases, 3 may be described as very severe attacks, with persistent high fever and marked abdominal or nervous symptoms. In 4 cases, the attack was pronounced; in 1, it was of an apyrexile type." And his conclusions are summed up in the following words—"Our experience, thus, has been that while inoculation *appears* to modify the disease, as completely modified attacks are met with in the uninoculated." He further adds a word of warning as to the possibility of harmful results following the inoculation. "In the case," he says, "of at least one of the members of the staff, inoculation was followed by a marked lowering of the health-standard, a malaise and indefinite feeling of lassitude and weariness. The sufferer ultimately developed enteric fever some two months after inoculation." These conclusions are so much at variance with those of some other competent observers, that we can only suspend our judgment till we have a much wider body of evidence on which to base our conclusions.

We regret that the authors of the *Report* have not added as an appendix the admirable inventory of the equipment which was printed and circulated before the hospital left Edinburgh. Such an inventory, with some comments on what articles in it were found unnecessary, redundant, or defective, and what additions were found essential to the proper working of the hospital at Norval's Pont, would be a valuable guide in future undertakings of the same kind.

Advice to Women on the Care of their Health, Before, During, and After Confinement. By FLORENCE STACKPOOLE. Third Edition. London: Cassell & Co., Limited. 1901.

IN the "introduction" to this little book we are told that the authoress has had "the assistance of an experienced doctor," and that "Dr. Berry Hart, of Edinburgh," has read the proof-sheets and made "some valuable suggestions." We are surprised at these statements as, in our opinion, the book is a very unsuitable one to put into the hands of an ordinary woman. That the book contains some information that is useful we do not for a moment deny, but, on the other hand, matters are gone into which to a lay woman must be perfectly unintelligible; and with all due deference to the "experienced doctor" who wrote the prescriptions, we do not consider it safe to put into the hands of patients, to use when they think fit, mixtures containing such drugs as opium and bromide of potassium.

Atlas and Epitome of Gynæcology. By OSKAR SCHAEFFER. Authorised Translation. Edited by R. C. NORRIS, A.M., M.D. London: W. B. Saunders & Co. 1900.

Anatomical Atlas of Obstetrics, with special reference to Diagnosis and Treatment. By OSKAR SCHAEFFER. Authorised Translation. Edited by J. C. EDGAR, A.M., M.D. London: W. B. Saunders & Co. 1901.

Atlas and Epitome of Labor and Operative Obstetrics. By OSKAR SCHAEFFER. Authorised Translation. Edited by J. C. EDGAR, A.M., M.D. London: W. B. Saunders & Co. 1901.

THE clinical teaching of gynæcology and obstetrics is necessarily attended with many difficulties. As an aid to the study of these subjects, Schaeffer's Hand Atlases should prove of considerable value. They afford the student and practitioner the means of elucidating and amplifying the few observations and examinations which they make in the hospital wards and dispensaries, or in the course of private practice. The coloured plates are numerous, well executed, and, for the most part, true to nature. Besides these, there are many diagrams which serve the purpose of bringing into prominence the more essential features of the affections described.

In the Atlas of Gynæcology there are 207 coloured illustrations on 90 plates, and 62 figures in the text; in the Atlas of Obstetric Diagnosis and Treatment, 122 figures on 56 lithographic plates, and 38 other illustrations; and in the Atlas of Labour and Operative Obstetrics, 14 lithographic plates in colours, and 139 other illustrations. These will well repay careful study, and though they cannot take the place of practical work, they will help largely in making clear the more important clinical facts, and in giving life to the descriptions in the text-books.

Each plate has opposite to it a fully descriptive text, which enhances the value of the illustrations. In addition, there is in each volume a continuous text in the form of a synopsis. This contains numerous references to the figures, but in no instance is there any indication given as to the page on or opposite which the figure is to be found. Hence the search for the illustrations cited is made needlessly laborious. The plates are interspersed throughout the volume with necessarily little regard to the pages of the text on which the affections which they represent are described. It would be, in our opinion, preferable to place them together at the end.

The translations have been carefully done, and there are not many misprints. In the Atlas of Gynæcology, on page 240, "hysterotomy" should be "hysterectomy," and on plate 51 the figures are transposed, and hence somewhat puzzling.

A Laboratory Course in Bacteriology. By FREDERIC GORHAM. A.M. London: W. B. Saunders & Co. 1901.

THE year 1901 was especially prolific in works on bacteriology —many good, a few very indifferent—but it is difficult to appreciate the value of this manual. The work is intended to be a guide to the practical details of laboratory work; but we feel that the student's mind would be in a more confused condition at the end of the course than it was at the beginning. Moreover, this is a guide, not only to medical, but to agricultural and industrial students as well, and the whole has been accomplished in 180 pages. The chapter devoted to the determination of species is too elaborate and confusing, and the classification of bacteria is not one we would recommend to students. The illustrations (few of them original) are good.

The Essentials of Practical Bacteriology. By H. J. CURTIS, B.S., M.D.Lond., F.R.C.S. London: Longmans, Green & Co. 1900.

THIS is an unpretentious little work, based on practical lessons given in the Bacteriological Laboratory of University College, London. The chapters on the *technique* are eminently practical and well arranged—almost no point has been considered unimportant enough to be omitted by the author. Nothing is taken for granted, and the description is such as the very beginner in the study of the art can understand.

The arrangement and classification of the germs we rather like, and is just such as we would recommend—beginning with non-pathogenic, and working by degrees into the pathogenic groups.

The descriptions of malaria and amœbic dysentery are unusually complete, and what is said of cancer leads us as far as it is just now possible to go. We are still in the mist as to what part micro-organisms play in the causation of cancer, and Dr. Curtis seeks to stimulate his readers to original work in this direction.

Altogether, we find much to please us in this production, and consider that as a laboratory book for the student, and as a guide to the practitioner who desires to increase his knowledge of bacteriology, it is to be highly commended. It is well printed, and well arranged throughout, and the illustrations (133 in number) have been carefully produced, those of cultures being specially good. If there is anything we would care to take exception to, it is the number of explanatory footnotes, most, if not all, of which could have been embodied in the text. In spite of this objection, however, we consider Dr. Curtis' manual as one of the best on the subject.

Elementary Bandaging and Surgical Dressing. By the late WALTER PYE, F.R.C.S. Ninth Edition. Revised by THOS. CARWARDINE, F.R.C.S. Bristol: John Wright & Co. 1902.

THIS little book is a separate re-issue, from the author's well-known *Surgical Handicraft*, of the sections dealing with bandaging, dressing, and treatment of accidents and emergencies. The editor has made several alterations and additions, and introduced some new illustrations.

The work is eminently handy, and should prove invaluable to dressers and nurses, for whose use it is intended.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

BY JOHN G. GRAY, M.D., F.F.P.S.G.

Twelve Cases of Pneumonia treated by Antistreptococcus Serum.—In an article in the *Boston Medical and Surgical Journal* (12th December, 1901), Dr. George G. Sears narrates a series of twelve cases of acute lobar pneumonia treated by subcutaneous injections of antistreptococcus serum, and gives the results of his observations.

While the number of cases from which to draw conclusions was limited, the author made an effort to restrict the treatment to those only which seemed entirely suitable, *i.e.*, he excluded those in which death seemed inevitable, and those that were likely to get well without it. Also, it was sought to commence the treatment as early as possible, but many of the cases did not come under his care in hospital till after the fourth or fifth day.

The serum was obtained from the same source throughout.

The employment of the serum did not preclude the use of other methods, such as cold sponging when the temperature rose above 102·4° F. In three of the cases, subcutaneous injections of normal salt solution were given. Oxygen, alcohol, and other stimulants were administered when they seemed necessary.

Eight of the twelve patients were over thirty years old, and of the other four, one had taken alcohol to excess, and in one pregnancy and pericarditis co-existed. The fourth was given large doses on the second day with a view to cut short the disease; the crisis, however, did not occur till the eighth day. Of the other eight patients, three had taken alcohol to excess, one had mitral regurgitation, one nephritis, and one artero-sclerosis.

Albumen was found in the urine in ten cases; in four it was considerable in amount. A slight trace appeared in one case after eleven injections, the urine having previously been clear; but in another albumen, which had been present, disappeared after a similar amount of serum had been injected. No distinct influence as regards the presence of albumen in the urine was observable.

In ten cases, the leucocytes numbered between 15,000 and 45,000. Of the two remaining patients, one died. Altogether there were four deaths. In one of the cases, owing to a temporary lack of serum, the patient was insufficiently treated.

In the nine in which recovery took place (one case is described which is not included in the series, as the patient was practically moribund when the treatment was begun), the temperature returned to normal, one on the fifth day, one on the sixth, two on the seventh, three on the eighth, and two on the ninth. Generally speaking, this is the course followed under other forms of treatment, so that it would seem to have no influence in shortening the course of the disease. An extension of the pneumonic process was even noted in three cases.

The author thinks that too much has been claimed for it in regard to its influence on particular symptoms. Pleuritic pain persisted in one instance for several days in spite of its use in large amounts. Still, the patients seemed "peculiarly comfortable" under its administration, even in fatal cases.

In three patients, two of whom died, mental symptoms developed; the third had been addicted to alcohol, and delirium set in on the day of the crisis.

Distinct benefit cannot positively be asserted, but no ill effects beyond those observed in connection with the use of diphtheria antitoxin—such as skin eruptions, and pain and swelling in the joints—were noticed, and these only occasionally.

Presuming that the serum has antitoxic properties, a great practical objection to its use is our want of knowledge regarding its strength.

On the whole, the author is disposed to advise a further trial of this method of treatment. He thinks that greater success might have been obtained had the treatment been begun earlier in the course of the disease.

On the Detection of Blood-colouring Matter in the Urine.—Otto Rossel, in a preliminary contribution to the above subject, which appeared in the *Schweiz. Wochenschr. f. Chemie* (4th September, 1901, describes a new method for detecting the presence of blood-colouring matter in the urine.

The urine to be examined is rendered strongly acid by the addition of acetic acid; an equal quantity of ether is added, and the mixture shaken up; an emulsion is thereby formed. The separation of the ether is brought about by cooling in ice water, and the process may be hastened by the addition of a few drops of alcohol or acetic acid. The ether, with the substances held in solution, is now poured into a test-tube containing a few drops of distilled water, and the whole shaken up. To this is then added fifteen to thirty drops of old oil of turpentine, or five to ten drops of freshly-made peroxide of hydrogen. The mixture is gently shaken up, and ten to twenty drops of a freshly-prepared 2 per cent alcoholic solution of Barbadoes aloes (in which 70 or 80 per cent is used) added, and the whole vigorously shaken up. Even if the trace of blood-colouring matter present is so small as not to be detected spectroscopically, within one to three minutes a red tint appears quite distinctly in the watery portion. After about ten minutes, it becomes cherry red. Since, however, tincture of aloes by itself often becomes red after standing for two hours, it is necessary to see that it is quite fresh. For this purpose, a pinch of the powder of aloes is taken and dissolved in 2 to 4 c.c. alcohol diluted with water.

The author claims for this method that it has the advantage over the guaiac test in that the tincture of aloes can be more quickly prepared than the tincture of guaiac; also, that the red colouring produced by the tincture of aloes lasts much longer than the blue colouration caused by the tincture of guaiac.—(*Deutsche Medizinal-Zeitung*, 30th January, 1902.)

A Case of Nutmeg Poisoning.—A paper, which was read by Dr. E. E. Hinman before the Medical Society of the County of Albany, U.S.A., on 13th November, 1901, on a case of poisoning by eating nutmegs, appears in the *Albany Medical Annals* for December, 1901.

The patient, a woman, aged 36, when first seen was in very weak condition. The pulse was 150, feeble and irregular. The pupils were about three-quarters dilated, and they failed to respond to light or accommodation. The respirations were shallow, and numbered 23. She complained of intense dryness of the mouth and throat, and of a feeling of constriction, amounting almost to pain, in the frontal region, also of numbness of the legs and hands, and of vertigo on the least exertion.

There were remarkable peculiarities of vision. All objects appeared to be very distant, and those near at hand seemed to quickly recede. Objects in the left half of the field of vision appeared to be chocolate brown, while those in the right half were normal, in colour. When the patient was raised in bed, everything became black before her eyes. While talking, she would suddenly stop and apparently pass into a dreamy state, in which her eyes were open; and, on resuming the conversation a moment or two afterwards, she would remark that she had been asleep, and had been dreaming that she was doing various things. Sounds appeared all to be distant.

During the forenoon of the day on which she took ill (she fell ill in the evening), she had eaten four or five whole nutmegs. She had frequently eaten half of one for a number of years. During the afternoon she felt weak and giddy and hardly able to walk. For several weeks prior to this she had been in a weak state of health from overwork and nervous strain, and she had not menstruated for two months.

Treatment was begun six hours after the last nutmeg had been eaten; accordingly, an emetic was not given. An ounce and a half of castor oil was administered with hot milk, then one tablet of Gordinier's heart tonic. Two drachms of whisky were given every half hour for three hours, and fifteen minims of aromatic spirits of ammonia for the same length of time. She was likewise given a pint of hot black coffee.

By midnight she had begun to improve. Large quantities of urine were passed during two days. Patient made a good recovery, and no after-effects were observed.

The literature on the subject is given. Only nine similar cases are recorded in the *Index Medicus* and *Bibliographica Medica*. In all of these, prostration with partial or complete coma was present. In most, vertigo, delirium, hallucinations (chiefly of sight), rapid feeble pulse, and polyuria were noted.

All authorities agree in recommending the thorough cleansing of the gastro-intestinal tract, followed by a stimulating line of treatment. When these measures are adopted promptly—provided coma does not supervene—the prognosis is good.

On Concealed Hæmorrhage from the Stomach.—J. Boas gives the results of special investigations on this point in a paper which appeared in the *Deutsch. Med. Wochenschrift*, 1901, No. 20.

He found that by means of the guaiac test the presence of blood in the contents of the stomach withdrawn by using the siphon was often detected when nothing pointing to its presence could be discovered by the most careful microscopical examination.

He examined the stomach contents in 83 cases, including the most diverse affections of that organ, and noted the absence of bleeding in all cases of neurosis, gastritis without acidity, hyperacidity, &c.; also, that it took place occasionally in gastric ulcer and secondary stenosis of the pylorus.

Acute hæmorrhage was invariably found in carcinoma. Accordingly, the author believes that we have in this method of examination a valuable addition to those hitherto employed for purposes of diagnosis.

Moreover, he thinks that we have, in these concealed hæmorrhages from the stomach, an important, if not the most important, cause of the marasmus of carcinoma ventriculis.—(Laspeyres, *Centralblatt f. d. Grenzgebiete der Med. und Chirurg.*, 26th November, 1901, No. 21.)

MATERIA MEDICA AND THERAPEUTICS.

By R. BARCLAY NESS, M.A., M.B., C.M.

Urotropine in Phosphaturia.—Winkel was the first to observe ("The Treatment of Phosphaturia by Urotropine") that in a case of gonorrhœa and acute phosphaturia, which had been treated for five months without success, a single dose of 3 grms. of urotropine made the urine perfectly clear, and that under this treatment the phosphaturia never returned. Up to the present time the greater number of these cases has proved incurable. Mineral acids effected a transient disappearance of the visible phosphate excretions, but only so long as they were employed. "Contrary to this," writes Casper in the *Deutsche Med. Wochenschrift* of 4th November, 1897, "we have now in urotropine a remedy which, in small doses (1 to 2 grms. daily) effects the disappearance of phosphaturia. Not in all, but in almost all, of the cases the urine became bright, which, until then, had been cloudy for months, and even years; and what is noteworthy, this effect continues for a very considerable time after the urotropine is discontinued."

Casper reports, among others, a case of severe phosphaturia which had developed after gonorrhœa, which he had treated unsuccessfully for six years by dietetic-hygienic means. The phosphaturia was accompanied with neurasthenic troubles, fatigue, depression, pains in the leg and back. Casper gave to this patient 1 grm. urotropine daily, and after eight days' medication the urine remained continuously clear, and the troubles of the patient were permanently removed.

Suppan (*Wiener Medizinische Blätter*, 22nd July, 1900) noted the extraordinary quick and lasting success in seven cases of phosphaturia, with the removal of numerous neurasthenic troubles which accompanied these cases.

J. D. Windel (*American Practitioner and News*, No. 12, 1896) reported a case of persistent phosphaturia which he cured by urotropine.

Contrary to this, Nicolaier could see no result in six cases of phosphaturia, but in one case, which he observed jointly with Professor Ebstein, the urotropine treatment was successful. Nicolaier, however, states that as we cannot distinguish phosphaturia with certainty at its commencement, it is best in all such cases to try urotropine in the first place, when the symptoms are doubtful. --(Nicolet, *Therapist*, 15th January, 1902, vol. xii, p. 5.)

Glutol.—Glutol is a short name for gelatine, hardened in a special manner by formalin, and thereby converted into a distinctly physically different product, which, in addition to its other powers, possesses peculiar characteristics for the antiseptic treatment of wounds of all kinds, and for securing their rapid healing.

Glutol is prepared and used in two different forms: First, as rasped formalin-gelatine—a white powder—and, secondly, as a thin glutol skin.

Dr. Schleich was the first who drew attention to the fact that glutol had special and distinct advantages as an antiseptic and vulnary of the very first order, and the deductions he arrived at as to its value on this head have been confirmed over and over again by other independent investigators.

As regards the action of glutol upon the tissues, the theory is practically the same in both preparations. The formalin is discharged and liberated from its chemical connection with the gelatine by the heat of the body, and absorbed directly, either by the pores of the skin, or into the raw surface in the case of an open wound. In open wounds, fresh or suppurative, the effect is magical. A permanent scab is formed almost at once, the wound is rendered absolutely antiseptic, and any pathogenic germs destroyed.

According to Schleich, "the great advantage of the glutol dressing is the absolute safety and certainty of the self-disinfection of fresh injuries, through the tissue itself. If the experimental proof of the constant action of formalin-gelatine is doubted, the pre-eminent clinical utility must be recognised. With the aid of this powder all acute purulent processes are overcome, and a guarantee is afforded for the aseptic course of the wound, without further measures. Furuncles, carbuncles, and phlegmons can be brought under control in twenty-four hours, in so far as the powder comes into contact with healthy or inflamed tissues."

Finally, this observer remarks, "To summarise briefly, we possess, in powder form, a remedy which, in contact with clean wounds, forms a firm scab, without further disinfectant measures, in the course of a few hours, so that primary stitched wounds are, in the shortest possible time, covered with a protective layer, which prevents infection. The formalin-gelatine is further able, by the molecular antisepsis set up by cellular activity, to destroy bacteria present in the tissues, and enables the cellular tissues to rapidly become masters of the situation."—(Poyntz Wright, *Therapist*, 15th January, 1902, vol. xii, p. 6.)

Sublamin: A Penetrating Disinfectant for the Hands.—This combination of sulphate of mercury and ethylenediamine derives its extraordinary penetrating power from the fact that in the presence of ethylenediamine a metal base, like sulphate of mercury, does not coagulate the albuminous skin tissue, and so prevent further penetration. The instructions are that the hands should be immersed in warm water and well scrubbed with soap and the brush, and after this process has thoroughly been done the hands should be well rinsed in clean water, and then immersed and brushed with a weak sublamin solution, 3 per 1,000. The tablets contain 1 grm. each; two of these should be sufficient for 20 or 25 oz. of water.

The harmlessness of sublamin is established by the fact that even solutions of 2 per cent will not produce skin irritations, which it would be impossible to prevent with even a 1 per 1,000 solution of corrosive sublimate.

Water containing sublamin will feel soft, as if soap had been dissolved in it, and it therefore adds considerably to effectual washing.

The characteristics of sublamin—that is, the penetrating power which the addition of ethylenediamine gives to this metallic salt—are similar to those pointed out in connection with argentamine, which is also a composition of nitrate of silver and ethylenediamine. In argentamine we have a far more effectual penetrating action, brought about by its association with ethylenediamine, and, what is more, a painless application, but with a destructive effect on the mucous membrane.– (*Therapist*, 15th January, 1902, vol. xii, p. 9.)

Hydrogen Peroxide for Removal of Hardened Cerumen.—Dr. G. C. Savage, in *Medicine*, states that for many years he has been in the habit of softening and removing wax from the ears by the aid of sodium bicarbonate, glycerine, and water. This solution had to be instilled into the ear two or three times a day for one or two days before the wax would be soft enough to be removed by the syringe. Some two years ago he read about the excellent effect of hydrogen dioxide on hardened wax, and has adopted this method since then with excellent results. The peroxide is warmed, and allowed to remain in the auditory canal five or ten minutes, and usually in this short time it will soften the hardest kind of wax so that it can be readily removed with a stream of water. If the accumulation of wax be of recent origin it will be dissolved by the peroxide.—(*The Practitioner*, February, 1902, vol. lxviii, No. 2, p. 243.)

Intra-ocular Disinfection with Iodoform.—In 1892 Dr. G. A. Berry described at the Ophthalmological Society how he had accidentally introduced some iodoform into the anterior chamber after an operation for extraction of cataract. The iodoform was only intended to cover the external surface of the wound, but on examination the day following the operation the anterior chamber was found to be filled to two-fifths of its capacity. Nothing was done; the iodoform gradually absorbed without causing any great irritation, and in fourteen days' time no trace of it was left.

In 1897 Ostwalt showed (*Arch. f. Augenheilk.*, Bd. xxxv) that iodoform introduced into the anterior chamber of a rabbit's eye produced no irritating effects.

At the International Congress at Utrecht in 1899 Haab recommended the introduction into the interior of the eye of small rods of iodoform in cases of threatened suppuration.

Several further contributions on this subject have recently appeared: by Dr. Ollendorff, of Königsberg, *Zeitschrift für Augenheilk.*, July, 1901; Dr. Goldzieher, *Centralblatt für Augenheilk.*, March, 1901; Dr. Karolina Knur, Inaug. Diss. from the Clinic of Professor Haab, Zürich, 1901; and M. Roemer, Heidelberg Ophthal. Congress, 1901.

Dr. Ollendorff introduced little discs of iodoform into the vitreous of rabbits through an incision situated posterior to the insertion of the superior rectus. He also experimented with the powder introduced through a trocar-like instrument. The iodoform he found was gradually absorbed without producing any irritating effect.

Dr. Goldzieher treated five cases of intra-ocular infection by the introduction of iodoform into the anterior chamber. The first case in which he tried it was one of infection following a penetrating wound with a piece of metal, which had remained in the eye. The piece of metal was removed, and iodoform introduced into the anterior chamber; no suppuration followed, and the eye quickly quieted down. The second case was a diabetic iritis, and the others cases of ulcer of the cornea with hypopyon. In all the cases the result of the treatment seems to have been very favourable. Goldzieher thinks that the rapid clearing of the cornea and the cessation of pain were attributable to the action of the iodoform.

Dr. Karolina Knur gives the details of twenty-three cases treated by the intra-ocular use of iodoform at Professor Haab's Clinic—some cases of foreign bodies in the eye, the others of infection from perforating wounds or after operations, and cases of ulcer of the cornea with hypopyon.

In eight of the twenty-three cases panophthalmitis necessitated enucleation in spite of the iodoform. Opacities of the cornea sometimes follow the introduction of the iodoform, probably from its action on the wounded endothelium. It is recommended, therefore, that it should be inserted through the cornea at a spot outside the pupillary area.

Its introduction into the vitreous ensures, apparently, a more intense action.

M. Roemer found that in a case of infection by staphylococci, after a discission for myopia, the introduction of iodoform brought about a complete recovery. In a second case of panophthalmitis, infected, after a wound by a chip of stone, with staphylococci, the panophthalmitis was arrested and the eye saved. In a third case, of infection by a bacillus after extraction of cataract, the iodoform produced no effect. Apparently it only acts when infection is from the ordinary pyogenic microbes.—(Treacher Collins, *The Practitioner*, February, 1902, vol. lxviii, No. 2, pp. 229-230.)

Larger Doses of Antitoxin in Diphtheria.—M'Collom (*Boston Med. and Surg. Journal*, 20th December, 1900) pleads for larger doses of antitoxin in diphtheria. He summarised, in the first place, the results that the use of antoxin has given, and shows how enormously the death-rate has been reduced. He then points out that there has been a great reduction of the mortality per cent in Boston since larger doses have been introduced. He believes that no hard and fast rule can be made as to the amount of serum to be given. It must be pushed till the characteristic effect is produced on the false membrane. In some cases 4,000 units will accomplish this, whereas in others 70,000 units may be required. In operative cases the effect of large doses has been very marked, especially in preventing the extension of membrane into the bronchi. M'Collom has seen so many apparently hopeless cases recover that he considers that no patient in the acute stage should be given up. He concludes by giving a report of some of his worst cases, the first, a boy of 6, intubated, who had 56,000 units in four days with no bad results and positive relief. His convalescence was uneventful. A second case, a little girl, aged 6, had 80,000 units with successful results. Other cases had 60,000, 84,000, 56,000, 76,000, and even 92,000 units of antitoxin. In all, eleven cases with recovery after colossal doses are reported. The reporter admits that other cases with large doses did not recover, but so many apparently desperate cases have done so that he maintains the chance should always be given. No bad results follow from the size of the dose. M'Collom prefers intubation to tracheotomy, his death-rate from the former operation being only 34 per cent out of 772 operated cases. While no doubt there is much to be said in favour of the large doses given—we may say here that he administers 6,000 unit doses from once to four times daily—we imagine that as good results would be obtained with a dose larger than is usually employed, but hardly so great as those recommended here. To repeat a dose four times in the twenty-four hours is giving very little time for the first doses to effect an improvement, which can as a rule be hardly expected in less than twelve hours after the first dose. It may be admitted, however, that large doses of antitoxin, say 20,000 units, are often very useful.—(Claude B. Ker, *The Practitioner*, September, 1901, vol. lxvii, No. 3, p. 340, 341.)

BACTERIOLOGY.

By Dr. A. R. FERGUSON.

The Duration of the Life of the Tubercle Bacillus in Cheese. By F. C. Harrison, Ontario, Canada (*Centralbl. f. Bakteriologie, &c.*, Bd. xxxi, 3rd March, 1902).—The experiments, details of which are given, were undertaken with the view of ascertaining the period during which the tubercle bacillus retains its vitality in cheddar cheese prepared in a country and place where such cheese is regularly manufactured. The experiments were undertaken in view of the statement (based on experiments made at Berne in 1899-1900) that "the tubercle bacillus died out between the thirty-third and fortieth day in cheese made after the Emmenthaler method; but in cheese made approximately after the cheddar method, the duration of life of the bacillus was much longer."

It was considered probable that cheddar cheese manufactured in Switzerland (on which the Berne experiments were made) might differ considerably in composition from that made in a district where such cheese is regularly manufactured, and the longevity of the tubercle bacillus might be thereby modified. Accordingly, 80 lb. of milk were infected with the tubercle bacillus, the entire growth obtained in twelve weeks in 700 c.cm. of glycerine bouillon being used for the purpose. The infected milk was converted into cheese according to the approved cheddar method.

Guinea-pigs were inoculated from the infected cheese every seven days, and after autopsy (death occurred in from sixty to eighty days after inoculation) were subjected to microscopical and bacteriological investigation. From these observations it appears that the bacilli died out between the sixty-second and seventieth days after infection of the milk. There was, however, evidence to show that even before this time the number of living bacilli was small or that their virulence had become much attenuated.

The results of these experiments justify the statement that cheddar cheese would contain no living tubercle bacilli when it was ten weeks old, and the possibility of eating living tubercle bacilli in cheddar cheese when "ripe" is, therefore, a remote one.

"The Etiological Significance of Bacillus Dysenteriæ (Flexner) as Tested by the Agglutinative Reaction with the Serum of Patients Suffering from Dysenteric Symptoms."

By Alex. G. R. Foulerton (*Centralbl. f. Bakteriologie, &c.*, Bd. xxxi, No. 5, 27th February, 1902).—The probable existence of several diseases differing ætiologically from one another, at present classed under the name "dysentery," from the outstanding symptoms present in each, is emphasised at the outset.

In most of the author's cases in which a positive agglutination reaction was obtained, the search for amœbæ in the fæces had met with negative results.

The cases examined with a positive result included those of (1) a seaman, Royal Navy, invalided from China with acute dysentery; (2) an Imperial Yeomanry trooper invalided with dysentery from Lindley, South Africa; (3) fireman, merchant service, dysentery contracted in Florida; (4) seaman, Royal Navy, chronic dysentery contracted at Ladysmith, South Africa (agglutination negative, no amœbæ found); (5) boy in Hertfordshire village, causing small epidemic through probable infection of the common water supply —a surface well; (6) surgeon, R.A.M.C., non-amœboid dysentery; (7) non-amœboid dysentery contracted in England; (8) chronic dysentery, incomplete agglutination. The author concludes that this may have been of a different character.

Out of thirteen cases of typhoid fever tested against the B. dysenteriæ, the serum from only one gave a "fairly good" agglutinative reaction with a dilution of 1 in 10, but was negative with higher dilutions. All the others gave negative results. Two sera from patients suffering from "chronic disease with diarrhœa" were also examined. One of these gave an incomplete reaction in a dilution of 1 in 10.

In the cases of "dysentery" in which positive results were obtained, however, the dilution employed with complete agglutination was not less than 1 in 40, a fact of considerable diagnostic significance.

The similarity between "asylum dysentery" and that occurring in the tropics makes the author's concluding suggestion, that the former complaint be studied from this point of view, of interest.

Books, Pamphlets, &c., Received.

Forensic Medicine and Toxicology, by J. Dixon Mann, M.D., F.R.C.P. Third Edition, revised and enlarged. London: Charles Griffin & Co., Limited. 1902. (21s.)

The Medical Annual: A Year-book of Treatment and Practitioner's Index. 1902. Twentieth Year. Bristol: John Wright & Co. (7s. 6d. net.)

Selected Essays and Addresses, by Sir James Paget. Edited by Stephen Paget, F.R.C.S. London: Longmans, Green & Co. 1902. (12s. 6d. net.)

Some Thoughts on the Principles of Local Treatment in Diseases of the Upper Air Passages, by Sir Felix Semon, M.D., F.R.C.P. London: Macmillan & Co. 1902. (2s. 6d. net.)

A Manual of Practical Anatomy, by the late Professor Alfred W. Hughes, M.B., M.C. Edin. Edited and Completed by Arthur Keith, M.D. Aberd., F.R.C.S. Eng. In Three Parts. Part II: The Abdomen and Thorax. Illustrated by 4 Coloured Plates and 151 Figures in the Text. London: J. & A. Churchill. 1902. (8s. 6d.)

The Four Epochs of Woman's Life: A Study in Hygiene, by Anna M. Galbraith, M.D. With an Introductory Note, by John H. Musser, M.D. London: W. B. Saunders & Co. 1901. (5s. net.)

Nothnagel's Encyclopedia of Practical Medicine (Saunders' English Edition). Variola, Vaccination, Varicella, Cholera, Erysipelas, Whooping-Cough, Hay Fever, by H. Immermann, Th. von Jurgensen, C. Lenhartz, G. Sticker. Edited, with Additions, by John W. Moore, M.D., F.R.C.P. Authorized Translation. London: W. B. Saunders & Co. 1902. (21s. net.)

The Treatment of Neurasthenia, by A. Proust and Gilbert Ballet. Translated by Peter Campbell Smith, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glas. London: Henry Kimpton. 1902.

A Treatise on the Acute, Infectious Exanthemata, by William Thomas Corlett, M.D., L.R.C.P. Lond. Illustrated by 12 Coloured Plates, 28 Half-tone Plates from Life, and 2 Engravings. London: Henry Kimpton. 1902. (18s. net.)

The Ready Reference Handbook of Diseases of the Skin, by George Thomas Jackson, M.D. (Col.). With 80 Illustrations and 3 Plates. Fourth Edition, thoroughly revised. London: Henry Kimpton. 1902. (12s. 6d. net.)

An Introduction to Dermatology, by Norman Walker, M.D. With 43 Full-page Plates, and 47 Illustrations in the Text. Second Edition, revised and enlarged. Bristol: John Wright & Co. 1902. (9s. 6d. net.)

GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 22ND MARCH, 1902.

	WEEK ENDING			
	Mar. 1.	Mar. 8.	Mar. 15.	Mar. 22.
Mean temperature, . .	44·4°	46·5°	46·6°	45·5°
Mean range of temperature between day and night, .	7·7°	9·8°	10·8°	12·8°
Number of days on which rain fell, ...	7	6	6	7
Amount of rainfall, . ins.	0·66	0·23	0·25	0·52
Deaths registered, . . .	358	382	337	363
Death-rates, ...	24·0	25·6	22·6	24·3
Zymotic death-rates, . .	2·3	2·3	2·9	2·8
Pulmonary death-rates, .	10·3	8·9	7·6	9·1
DEATHS—				
Under 1 year, . . .	57	76	54	67
60 years and upwards, .	101	86	80	73
DEATHS FROM—				
Small-pox, ...	10	2	7	6
Measles, ...	6	9	4	6
Scarlet fever, . . .	4	4	4	1
Diphtheria, . . .	...	1	3	...
Whooping-cough, . .	7	8	12	15
Fever, ...	2	2	2	2
Diarrhœa, ...	5	9	11	12
Croup and laryngitis, .	2	1	2	3
Bronchitis, pneumonia, and pleurisy, . . .	121	102	93	108
CASES REPORTED—				
Small-pox, ...	22	95	53	10
Diphtheria and membranous croup, ...	7	13	12	12
Erysipelas, . . .	24	19	19	23
Scarlet fever, . . .	50	58	60	39
Typhus fever, . . .	...	1	...	...
Enteric fever, . . .	20	21	24	16
Continued fever, . .	...	...	...	1
Puerperal fever, . .	3	...	4	...
Measles,* . . .	154	160	164	201

* Measles is not notifiable.

SANITARY CHAMBERS,
GLASGOW, *26th March, 1902.*

THE

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ORIGINAL ARTICLES.

THE TREATMENT OF ENDOMETRITIS.[1]

By W. J SMYLY, M.D., F.R.C.P.I., Dublin,
Honorary President, Glasgow Obstetrical and Gynæcological Society.

Gentlemen,—It is with pardonable pride that I rise to address you this evening. To be the Honorary President of the Glasgow Obstetrical and Gynæcological Society is an honour which any obstetrician or gynæcologist might regard with feelings of pride and satisfaction; and when I recall the names of the distinguished men who have held the position before me, it is the more gratifying to me to know that my name will descend to posterity on such a roll of honour. I do not feel that I come amongst you as a stranger; for, as I look around upon my audience, I see many familiar faces of former pupils in the Rotunda Hospital, and I cannot but feel that it is due more to your kindly friendship than to any merit of my own, that I have been placed in the position which I now occupy.

That position, however, at the present moment, appears to me to be honourable rather than honorary, for it entails the necessity of delivering an address. In selecting a subject for that address, I have departed from the time-honoured course of reviewing the history of our art, the triumph of antiseptics, and the many operative successes resulting therefrom; and have chosen a less ambitious theme, but one, I hope, not devoid of general and practical interest—"The Treatment of Endometritis."

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[1] Presidential address delivered before a meeting of the Glasgow Obstetrical and Gynæcological Society held on 22nd January, 1902.

It would, no doubt, be more scientifically correct to have considered the treatment of uterine inflammations as a whole; since a distinction between cases of myometritis and endometritis does not occur in Nature, nor could any line of treatment directed to the cure of one to the neglect of the other prove of any permanent benefit. Yet the limits of time, in which I would venture to impose upon your patience, preclude a thorough consideration of the subject. And since the treatment of myometritis is chiefly constitutional, whilst that of endometritis is almost entirely local, I think I may, whilst emphasising the importance of the former, confine my remarks to the latter—though not only admitting, but most energetically affirming, that a judicious combination of both is the only possible road to success.

What, then, is endometritis? The word signifies inflammation of the uterine mucous membrane, but we generally include under it a number of conditions which are not clearly and certainly inflammatory. Some authorities, indeed, refuse to admit such conditions as interstitial and glandular disease under the title of endometritis; foremost amongst these, the late Dr. Mathews Duncan and Dr. Herman, who place them under the titles myxoma and adenoma. I prefer, however, to adhere to the old arrangement. Firstly, because it is convenient in practice, a reason which has been considered sufficient in other equally uncertain nomenclature; as, for example, accidental and unavoidable hæmorrhage, peri- and para-metritis, and granular erosion of the cervix, where it is generally admitted that the terms are bad and misleading, but have been so long in use, and are so generally understood, that a change has been considered inexpedient. Another and more scientific reason for refusing to adopt the newer classification is, that it appears to be premature, since these diseases have by no means been proved to be non-inflammatory in their nature. The presence of a small-celled infiltration suggests such an origin; and although infectious germs are not generally found, and the investigations of Döderlein, Pfannenstiel, Bumm, and Menge would seem to prove their absence, yet they have been observed by others; and although it would be difficult to disprove the assertion that the discovery of germs was due to imperfection in the methods employed, and that they were actually introduced by the observers themselves, yet such observations have lately been strongly supported by Albert, who, from clinical observation, concluded that Döderlein and others have gone too far in asserting that in cases of chronic endometritis, the endometrium is always free from germs. The facts which he adduces in support of this opinion are these:—Out of 2,300 cases delivered in Leopold's Clinic in Dresden, in one-fourth of those who had fever it was found to depend upon gonococci, and this infection must have occurred before labour, and probably before conception. From his own investigations he not only confirms this view, but further states that it is true of other microbes also, which entering the uterus before conception, remain latent during pregnancy, but under the altered condition of the puerperium develop a virulent character, causing serious illness, and even death. He mentions several instances in support of this opinion, and especially two cases in which septic fever set in immediately after delivery and proved fatal in forty-eight hours, in both of which he found the focus of infection in the endometrium at the fundus of the uterus. Now, although I am still inclined to believe that those are right who hold that chronic endometritis is not associated with microbic infection, yet the subject is still open to discussion.

Etiology.—Scientific treatment depends upon exact knowledge of the cause of any illness, the removal of that cause being the chief object in effecting a cure. But, unfortunately, our knowledge in this respect is often imperfect, and our treatment empirical. In some forms of endometritis the cause is evident, in others obscure. The subject, therefore, divides itself into—

1. Cases in which micro-organisms are always present, and are evidently the cause of the complaint, and these we can further sub-divide into those which are—(*a*) Septic or saprophytic, (*b*) gonorrhœal, (*c*) syphilitic (?), (*d*) diphtheritic, (*e*) tubercular.

2. Those in which such germs do not exist. These are subdivided into—(*a*) Post-puerperal, (*b*) post-gonorrhœal, (*c*) interstitial, (*d*) glandular, (*e*) hypertrophic or fungous, (*f*) decidual, (*g*) dysmenorrhœal, (*h*) plastic or membranous, (*i*) ichthyosis uteri.

These latter forms cannot, however, be so sharply differentiated from each other as the former, and their inflammatory nature is not always, as has been already pointed out, clear. Some of them are no doubt the result of former acute inflammation, but most of them set in insidiously in connection with vascular and nervous disturbances. They are generally found to be connected with, and are probably due to, a number of causes, amongst which the most frequent are uterine displacements and tumours, cervical lacerations, ovarian and tubal diseases, obstructive diseases of the heart and lungs, nephritis, fevers (especially enteric fever), measles, influenza, cholera, perverse sexual irritations (such as onanism and preventive methods used to avoid conception). When we consider the many changes that the endometrium undergoes during pregnancy and childbed, in the formation of the decidua, the separation of the placenta and involution, it is no matter for surprise that these processes are sometimes arrested, and assume pathological conditions. Abortion is no doubt more frequently the result of endometritis than its cause, but there can be no doubt that in some cases, especially where septic infection has occurred, and even without it, the disease results from abortion. The simple retention of the decidua, in part or altogether, will, in some cases, result in endometritis; but why it does so in some, and not in all, we cannot tell. In the treatment of endometritis it is, therefore, of great importance, but not always possible, to discover and remove its cause.

Another preliminary consideration is as to the necessity for local treatment in endometritis. If we adhere to the rule, as we undoubtedly should, that treatment should not be more dangerous to the patient than the disease from which she is suffering, we must come to the conclusion that many cases do not require local treatment. First, because no kind of local interference is entirely devoid of risk; and, secondly, because many women suffer from a leucorrhœa which causes little inconvenience and no risk. This is especially the case in young unmarried women. It is different, however, where health is undermined and life rendered useless by constant hæmorrhage or intolerable dysmenorrhœa. In married women, too, leucorrhœa is a more serious matter, though everyone does not think so. Some years ago, a young married lady, whom I had been treating for metritis, consulted a distinguished London specialist, who wrote to me saying:—"I have seen your much complaining, much complainted patient. She is suffering from a healthy leucorrhœa, which requires no treatment." Now, in my opinion, a much complaining, much complainted, patient does require treatment, and especially if she be a married woman, for it is in connection with child-bearing that metritis assumes its most important position. That many women continue childless owing to this disease, is proved by those cases in which pregnancy has followed its cure. That it is frequently present in connection with pregnancy, and that it is a source of many serious complications, has been long since proved by Veit and others. I have already alluded to its being a cause of abortion. This was proved by Veit, who found evidences of its presence in almost all of a large number of abortions examined by him; and since it is a chronic disease which does not tend towards recovery if left untreated, it is easy to understand the frequent recurrence of abortion in the same patient—the so-called habit of aborting. The symptoms of endometritis during pregnancy are the same as at other times, namely, hæmorrhage, pain, and discharge; and the presence of the last, according to Veit, is the most rational explanation of hydrorrhœa gravidarum. Under ordinary circumstances, the decidua reflexa and decidua vera unite towards the end of the fourth month, but in cases of uterine catarrh they sometimes fail to do so, and a space is left which gradually becomes filled with fluid, the clear uterine secretion; when the tension in this cavity, increased in some cases by uterine contractions, overcomes the resistance at the internal os, the fluid escapes with a rush, and is frequently mistaken for liquor amnii.

Anomalies of the placenta, such as placenta marginata and succenturiata, excentric or velamentous attachment of the cord, hæmorrhagic infarctions, and placenta prævia, are most frequently results of endometritis; and so is, in all probability, premature separation from the normal site or accidental hæmorrhage. The frequent association of this accident with nephritis, and the recent discovery of gonococci in the decidua serotina, in a case of accidental hæmorrhage, support this view. Adhesion of the placenta, necessitating manual interference, is another result of the same disease. Besides all this, uterine inertia and post-partum hæmorrhage result from metritis, and so do profuse losses in the puerperium, amounting in some cases to secondary hæmorrhage. From all this it is evident that endometritis which causes severe symptoms in the unmarried, and even those forms which cause only slight symptoms in those who have to bear children, require active local treatment.

Treatment.—Prevention is better than cure, and therefore the prevention of these diseases deserves the utmost care. Asepsis in midwifery and gynæcology, the instruction of those suffering from specific diseases as to the risks attending sexual relations, the care of young women at the menstrual period, and the proper treatment of uterine displacements and tubal and ovarian diseases, as well as attention to diet, the action of the bowels, and health in general, has done much in this direction; still, a large number of cases remain which require local remedies.

Leucorrhœa, however, in young unmarried women, generally depends upon constitutional causes, and is, with few exceptions, best treated by general and not local remedies.

The cases which do require local medication are divided into those which depend upon infection, and those in which micro-organisms are absent. The treatment of septic endometritis is still open to discussion. Since Bumm has shown that before symptoms show themselves, the micro-organisms have already invaded the tissues so deeply that their destruction and complete removal is no longer possible, some authorities have abandoned all local measures as useless, and their position is further strengthened by the experiments of Schimmelbusch, who found that it was impossible, with the most thorough antiseptic treatment, to cleanse even a freshly infected wound. But, I believe that the amount of septic material present is an important factor in the ultimate result, as well as the virulence of the micro-organisms, and that, therefore, even a partial removal of infectious matter is of vast importance; and clinical experience has, I believe, proved that this is so, and that energetic local disinfection has yielded the best results. Antiseptic douching should therefore be commenced at the earliest possible moment, and several pints of the fluid should be passed through the uterus. A douche and not a Higginson's syringe should always be employed, and a double current catheter, such as Bozeman's, to secure a free return. Such highly poisonous substances as the perchloride of mercury and carbolic acid are not suitable in puerperal cases, and it is advisable to use less dangerous antiseptics, such as chinosol, lysol, creolin, boric acid, and permanganate of potash. When, after two or three douchings, the temperature remains high, or the discharge copious and putrid, the uterine cavity may be plugged with iodoform gauze, which should be renewed every twelve hours. Where this does not succeed, and there is a possibility that portions of placenta or membranes have been retained, the cavity should be explored with the finger and such particles removed.

The value of the curette in the treatment of septic endometritis is a much disputed subject. It has been warmly advocated by some, especially French authorities, including

Charrier, Charpentier, and Pozzi; but as strongly condemned by others, including the leading German teachers, especially Olshausen, Fritsch, Veit, and Gottschalk—the former believing that the causes of the disease are most thoroughly removed by this instrument, and the latter, whilst admitting this fact, contending that their removal cannot be complete, and that by destroying the barrier which Nature has erected to prevent the invasion of the system, irremediable injury may result. My own opinion is that the sharp curette is a very dangerous instrument in such cases, but that a broad blunt instrument, such as Rheinstädter's flushing curette, if carefully employed, is often of the greatest value in removing putrid material which cannot be dislodged by the finger.

The last resource, in otherwise hopeless cases, is extirpation of the uterus. Some cases in which this has been done with varying results have been published from time to time by Schultze, Sippel, Baldy, and others. It is a proceeding, however, rarely justifiable, and only where the source of the disease is situated in and only removable with the uterus. It is, however, a matter of extreme difficulty to determine when this is the case. In acute septic cases it would be useless; in saprophytic, it is apt to be performed unnecessarily, or too late, after the disease has spread too far. The cases in which, however, it has undoubtedly saved life are those in which a putrid placenta has become incarcerated in the uterus, and cannot, with equal safety, be removed in any other way, as was the condition present in Schultze's case.

Treatment of chronic endometritis.—It has been laid down as an axiom that the treatment must not be more dangerous than the disease, and therefore leucorrhœa in young unmarried women should seldom be treated locally; besides, since this condition almost always depends upon constitutional causes, it is most amenable to cure by general measures.

To this fundamental rule we may add that the remedy should be capable of curing the disease, and that it should do so within a reasonable space of time. The practice of making applications to the endometrium twice a week, until the patient's faith or purse is exhausted, cannot be too strongly condemned; it is not only discreditable to the medical attendant, but often leaves the disease uncured, and the patient a nervous wreck. "Doctor," said a patient to her medical adviser, "you have been treating me for fifteen years." "My dear madam," he replied, with a benevolent smile, "I hope I may do so for another fifteen."

In the treatment of endometritis, the methods in vogue are the following:—

1. Antiseptic and astringent douches,
2. The curette.
3. Chemical caustics.
4. The thermo- and electro-cauteries.
5. Steam.
6. Hysterectomy.

Out of all these I have not the slightest hesitation in giving the first place to the curette, and in this I believe that most gynæcologists will agree; but of late I have read many publications which appear to me to unduly disparage its merits. It seems the fate of all therapeutic measures to pass through certain stages—First, neglect; secondly, undue popularity; lastly, disparagement. The curette has now reached this third stage. From the time it was first introduced by Recamier in 1847, until it was taken up by Olshausen, it met with little attention. But after its merits had been demonstrated by Olshausen and Martin, and especially after Düvelius had shown that the mucous membrane was completely regenerated in a very short time after its removal, the method became universally popular, and was used in every form of disease of the uterine mucous membrane. It soon became evident, however, that it was by no means a universal panacea, and many failures, unfortunate accidents, and even a few deaths, were reported. It now became necessary that an authoritative voice should be raised against the employment of this method in unsuitable cases, and no one more qualified to raise a warning note could have been found than Professor Olshausen, to whom chiefly we owe its popularity. As a firm believer in its merits, when employed in suitable cases, his caution against its abuse was all the more important.

The points which specially recommend the curette in practice are its efficiency, simplicity, and safety; but it must not be forgotten that it is also our only means of arriving at an exact diagnosis. The indications for its employment are purely symptomatic, the results obtained by microscopic examination of the particles removed are anatomically exact, and it is almost entirely due to the use of this instrument that we have come into possession of our present knowledge of the normal and abnormal anatomy of the uterine mucous membrane; and should we employ any other method of treatment, without first employing this one, we cannot be certain that we are not attempting the impossible, and striving to cure an incurable condition.

The curette is especially efficient in cases where hæmorrhage is the chief symptom, but is seldom of use in those chiefly characterised by leucorrhœa, and the results are very uncertain in the cure of pain; or, in other words, it is beneficial in post-puerperal and fungous endometritis, useless in the interstitial form, and uncertain in dysmemorrhœa.

I have already said that the use of the curette is simple and safe, but that is only when skilfully employed in suitable cases; under other circumstances its dangers are many and great. Perforation of the uterus is not a very serious matter, unless some caustic is subsequently injected or aseptic precautions have been neglected; but an unskilful use of the instrument may not only remove the entire mucous membrane but part of the muscular wall as well, resulting in the partial or complete obliteration of the uterine cavity; and this is especially likely where the uterus is softened by pregnancy and during involution. The employment of the curette in early abortions is such an apparently simple and efficient method of emptying the uterus, that it is largely employed at the present time; but, in my opinion, such treatment is essentially bad and dangerous, and where Nature requires assistance the sentient finger, even though it may entail a previous dilatation of the os, is the proper and only safe method of dealing with retained portions of the ovum, and if instrumental assistance is required, it should always be controlled by the finger.

The danger attending the use of instruments without such control is painfully illustrated by a case reported in 1899 by Boldt, of New York. A medical man, when curetting for abortion, unconsciously perforated the anterior wall of the uterus. He subsequently introduced an ovum forceps, with which he removed some lumps of fat; and at last brought down a white-looking tube, around which he crooked his finger, tore it through, and found it to be a loop of intestine. He then desisted from further manipulations, inserted some iodoform gauze into the vagina, and summoned Boldt to his assistance. On his arrival, the latter found the woman's general condition so good that he doubted the accuracy of the description which he received, and determined to wait. After fifty hours, dangerous symptoms set in, cœliotomy was performed, and the injured bowel found extensively separated from its mesentery, and in a gangrenous condition. The intact ovum was still in the uterus. Boldt made no remark upon this case; but Sänger and Chrobak both commented upon it, pointing out, in the most emphatic manner, the dangers attending the use of instruments in such cases unless controlled by the finger. Unfortunately, this is not a solitary case, for similar accidents have been reported by Mann and others, some of which were saved from death by timely operation, and some were not. The lesson to be learned from the misfortunes of others is not, however, the abandonment of a useful method of treatment, but rather its more skilful employment and its restriction to suitable cases. In the case of abortions, I am entirely in accord with Chrobak, that the use of the curette should be limited to the removal of particles or shreds which cannot be detached by the unaided finger, and that it should always be controlled by the latter; and even where a curetting is required after the evacuation of the ovum, it is better, if possible, to postpone the operation until involution is completed.

Antiseptic douching can only be of use where infective germs are present; and, as the experiments of Döderlein, Menge, and others have proved that, excepting gonorrhœal and tubercular cases, such germs are not present in chronic endometritis, such treatment is evidently useless.

For the successful employment of chemical agents in these cases, it is generally admitted that they should be applied in a sufficiently caustic form to destroy the entire membrane, otherwise diseased tissue is left, and the new-formed membrane either retains the pathological characters of the former one, or assumes them through contiguity of diseased portions of membrane. An important observation in this connection was made by Menge from the examination of seventy-six uteri removed by hysterectomy. He found that in almost all of these the deepest layer of the endometrium was healthy; and this would encourage us to hope that, provided only the primary causes were removed, a healthy membrane would grow from this deepest layer of the endometrium. Even in gonorrhœal endometritis, he maintains that this deep layer is generally free from germs, and that the accompanying metritis is entirely due to toxins; and so when the superficial layers are destroyed by a powerful caustic and antiseptic, the gonococci, which are not very resistent, are also destroyed and eliminated, and a healthy membrane will grow from the deepest layer. A caustic is more efficient in these cases than the curette, because the germs are not killed by the latter, and may be inoculated upon the raw surface left by the operation.

The caustics most frequently employed at present in the treatment of endometritis are:—Liniment of iodine, carbolic acid (alone, or mixed with alcohol, or combined with iodine as iodised phenol), the liquor ferri perchloridi, fuming nitric acid, sulphate of copper, chloride of zinc, and formalin. All these agents are not of equal value. Some of them, especially iodine, are not sufficiently powerful caustics, others destroy the tissues too deeply, and many of them cause intense suffering and alarming colic.

For ordinary use, perhaps carbolic acid and alcohol is the best; it causes little pain, is easily applied, and although cases of intoxication have been reported, I have myself never met with one.

Fuming nitric acid is said to be too powerful and too unmanageable an agent, causing in some cases obliteration of the cavity, or leaving cicatricial tissue instead of a normal endometrium. When I was assistant to Dr. Atthill in the Rotunda Hospital I saw a large number of cases treated with this caustic, and the results appeared to be excellent; and I see that it is still recommended by Dr. Herman, in his work on *Diseases of Women*. The fact, however, that it has been followed by the results already mentioned has prevented my employing it any more.

Chloride of zinc is strongly recommended by Sänger, but he does not omit to caution those who employ it, as he does, in a concentration of 50 per cent, to do so with extreme caution. This remedy has one, and only one, point in its favour, and that is efficiency. But its imperfections are so many that gynæcologists would hail with satisfaction any other equally efficacious treatment, free from these defects. Amongst the disadvantages attendant upon the use of chloride of zinc are the intense suffering, and sometimes even alarming colic, which follows its use. It forms a deep slough, the separation of which has been attended by violent hæmorrhage, and affords a favourable nidus for septic germs, which, owing to its feeble antiseptic properties, are liable to be introduced with it. Stenosis of the cervix, with consequent hæmatometra, has occurred in some cases, but generally where it was introduced in the solid form. That chloride of zinc is a feeble antiseptic is proved by Menge, who found that anthrax bacilli were still alive after immersion for twelve hours in a 50 per cent mixture. Paul and Krönig found them still capable of development after ten days in a 15 per cent solution, and Koch after one month in a 5 per cent solution.

Formalin is, according to Menge, the ideal caustic in endometritis; it is sufficiently corrosive without being dangerous, and is a powerful antiseptic. Since reading Menge's article in the *Archiv für Gynäkologie,* I have employed this drug extensively, and, as far as one could form an opinion in a few months, with very good results. The only disadvantage that I found was intense pain for a short time after its application. I used it in the strength recommended by him, namely 30 per cent for the endometrium, and pure formalin for erosions.

Quite as important as the caustic employed is the method of applying it. The methods generally adopted are by means of cotton wrapped on probes, syringes, gauze, and solid sticks; of these, probes are the best and safest. Playfair's probes have been generally superseded by metal ones, made in a single piece, which are not so easily destroyed by boiling. A good sound should be smooth, flexible, and not too thick.

Sänger strongly advocates a soft silver American probe, and Menge probes, made of vulcanite, which are much less expensive. The chief point in using a probe is perfect asepsis. This is not so generally recognised as in other manipulations, such as the introduction of the sound and curette, but is quite as important. The general impression that any micro-organisms attached to the cotton must be destroyed by the powerful caustic is erroneous, and has been the chief cause of failure in the past. The common practice of applying the cotton, probably with septic fingers, immediately before its introduction is to be condemned, and the safe and simple method suggested by Menge highly commended. His plan is to place a number of probes, carefully armed with cotton applied with clean fingers, in a long glass jar, containing the formalin solution, the top of which is closed with a glass lid. After twelve hours, the cotton is sterilised and ready for use. When an application is required, the cervix is exposed by means of Trelat's or other speculum, and carefully mopped with an antiseptic solution. A piece of wet cotton, having been placed under the cervix to protect the vagina, a probe is taken from the glass jar and passed up to the fundus. Two or three probes are generally used, care being taken to pass one into each corner of the uterus. Lastly, the cervix is wiped dry, a little iodoform gauze inserted, and the speculum withdrawn.

This process need not be repeated until its effects are complete—that is, after about a fortnight. Our failures in the past have been due, not only to imperfect asepsis and inefficient caustics, but probably also to too frequent repetition, by which the formation of a new membrane is frequently interrupted, and the endometrium kept in a constant condition of change, productive of pathological rather than normal growth. The objection urged against the use of probes is that, in passing the os internum, most of the caustic is squeezed out of the cotton, and very little reaches the uterine mucous membrane. The occurrence of colic, however, proves that this is not the case, and Menge showed, by experiment, that the caustic does enter the uterus. He passed probes dipped in methylin violet into uteri previous to their extirpation, and found that the colouring matter not only entered the cavity in considerable quantities, but spread itself evenly over the surface. Gauze has the same disadvantages as cotton-wool, and is more difficult of application. After curetting, however, the introduction of some iodoform gauze, as recommended by Döderlein, is of use.

Those who consider that caustics cannot be introduced in sufficient quantity by probes, employ a syringe, and most frequently Braun's syringe. The obvious advantages of this instrument are so many, that the risks attending its use are often overlooked; but the fact remains that most of the accidents which have resulted from intra-uterine treatment, have been due to the use of the syringe. The chief danger is the passage of fluid through the Fallopian tubes into the peritoneal cavity. Döderlein's experiments proved that this does occur, for when he injected methylin blue into a uterus, with every precaution, he found, after extirpating the organ, that the pelvic peritoneum was stained with the colouring matter. Hofmeier repeated these experiments, but did not altogether confirm them, and he maintains that this accident occurs but seldom, and only under peculiarly favourable conditions. Menge, however, repeated the same experiments, and fully confirmed the results obtained by Döderlein. He found, however, that he altogether failed in attempts to drive the fluid into the tubes, in uteri removed from the body; but, on the other hand, when he injected uteri during an abdominal operation, in every case almost all the fluid welled out of the abdominal ends of the tubes, and this occurred so rapidly that any attempt to suck back the fluid was of no effect. He explains this phenomenon by the fact that the uterine is only a potential cavity, that the introduction of the syringe may cause so firm a contraction as to prevent a separation of the walls, and therefore when an incompressible fluid is injected, even in very small quantity, it is pressed into the tubes. It has been urged, however, that even should a little fluid pass through the tubes, it would cause a harmless local irritation. But Menge contends that though local, such an irritation cannot be regarded as harmless, since it may cause adhesions and partial or complete obliteration of the tubes, with consequent sterility, predisposition to ectopic pregnancy, hydrosalpinx, and perioöphoritis. Another objection which he urges against the syringe is that, owing to its complicated construction, it is impossible to sterilise it thoroughly; and this applies equally to the modifications of the instrument by Hoffmann and Santos, in which cotton is wrapped around the canula. Hofmeier, on the other hand, says that he has employed the method for years in many hundreds of cases, without a mishap; but, although my own experience coincides with Hofmeier's, yet, considering that in cases predisposed to its occurrence—disaster appears to be beyond human skill to prevent—it is time for us to consider whether this instrument should not be altogether banished from our armamentarium.

The introduction of caustics in the solid form, especially the sticks of chloride of zinc introduced by Dumontpallier, was at one time popular; but, in consequence of many unfortunate results, including stenosis of the os, with consequent dysmenorrhœa, hæmatometra, and sterility, has been generally abandoned. The worst results followed the use of chloride of zinc, but milder caustics, applied in this form, acted unequally, in some parts destroying the tissues too deeply, and in others not at all.

This latter objection applies also to the electro-cautery, with which I associate Apostoli's methods. The results are often satisfactory, but as often uncertain, and its action is difficult to control.

The treatment of endometritis by steam was introduced by Sneguireff, of Moscow, less than ten years ago. In 1897 he reported the results in four hundred cases in glowing terms. It was not only a caustic but a hæmostatic, deodorant, and anæsthetic, and produced no ill effects. The method was tried by others, but not with the same success; and it would doubtless have fallen into oblivion but for the efforts of Pincus, by whom it has been rendered comparatively safe, and who by his numerous contributions to medical journals has kept it before the profession. The method has been now extensively tried by most of the leading gynæcologists in Europe and America, but in these countries it does not seem to have attracted much notice, though Professors Simpson, of Edinburgh, and Macan, of Dublin, have written in favour of it. The points in which Pincus has endeavoured to improve upon Sneguireff's method are—(1) To regulate the temperature, so as to supply steam of a constant temperature and of sufficient expansion to reach every part of the uterine cavity;

(2) to provide a safe outlet for the steam, water of condensation, and uterine discharges; (3) to eliminate the danger of scalding the hands of the operator, or his assistant, as well as the roasting of the cervix by contact with the heated catheter, and the scalding of it by returning steam.

All these objects have been fully attained by the apparatus which he has constructed. When employing vaporisation by Sneguireff's method, heat was applied in two forms—firstly, the direct action of the steam; and, secondly, that of heated metal. Both these are useful under suitable conditions, and dangerous under other circumstances; and Pincus has succeeded in constructing instruments by means of which either can be employed separately. When vapour alone is desired, the catheter constructed by Dührssen should be used. It is completely protected by a substance which is a non-conductor of heat, and the steam which issues from it alone acts as a cautery; this is termed atmocausis. Where metal heated by steam is required, the catheter designed by Pincus is employed. It resembles the atmocautery, but is not covered by a non-conducting material, and has no holes through which steam can escape. This method is termed zestocausis. By these methods, Pincus claimed that it was possible to cure subinvolution, metritis, all forms of endometritis, dysmenorrhœa, preclimacteric hæmorrhages, the leucorrhœa of old women, as well as commencing puerperal infections, both after delivery at term and in putrid abortions, and also to disinfect the uterus before extirpation. It is important, however, to consider the objections which have been brought against this treatment. In some cases it has failed to cure; in others, unfortunate accidents, and even deaths, have followed its application. The most important, however, were the criticisms of Flatau, who declared, after a series of experiments, that the temperature of the fluid entering the uterus is not more than 65° to 75° C., and that it is therefore not steam, but a fine spray of hot water, and incapable, in the short time occupied by the operation, of sterilising the contents of the uterus; and this he further proved by experiment. Further, his investigations proved that the destructive power of steam upon the uterine tissues does not depend so much upon either its temperature or the duration of the process, as upon the condition of the uterine walls and the size of its cavity, and that therefore a dosage, as claimed by Pincus, is impossible. To these criticisms Pincus replied that most of the accidents have been due to defective instruments, or to improper use of the treatment. Experiments as to the temperature of the steam are fallacious, and the true test is clinical experience. In consequence of further experience, and no doubt also influenced by these criticisms, he has somewhat modified his views as to the germicidal powers of this agent, and employs it less frequently in putrid abortions, and only where hæmorrhage or fever persists after the thorough evacuation of the uterus. Its beneficial effect in commencing septic infections he still maintains, but he attributes it to the sealing of the mouths of the blood-vessels and lymphatics, by which the organism is protected from invasion, and the production of a copious discharge, by which the micro-organisms are eliminated. In gonorrhœal and tubercular endometritis, he thinks it is the best treatment.

The points of most importance in the use of this method are—first, to have the most improved apparatus, and to see that it is in good working order; to see that the cervix and vagina are well protected, and that no hæmorrhage is going on at the time of application. In a dilated uterus, use atmocausis; in a normal sized cavity, zestocausis. Operate, as far as possible, without anæsthesia or previous curetting, and, where the latter is required for diagnostic purposes, wait until the membrane has re-formed. In young women, the application should not exceed five to fifteen seconds. Obliteration of the cavity is only advisable as an alternative to extirpation of the uterus. It is advisable to keep the patient in bed until the membrane has re-formed.

In chronic metritis and subinvolution, the results obtained in published cases are truly remarkable. In small interstitial myomata, the method has also proved useful. In his work on fibro-myomata of the uterus, Mr. Stanmore Bishop passes over this method of treatment, as only capable of affording temporary relief; but this is not in accord with the published results, and is the more remarkable since he strongly supports electric treatment. In granular erosion, zestocausis is efficient, and also in cervical catarrh, and is a good palliative in carcinoma corporis. Its chief value, however, is in the treatment of preclimacteric hæmorrhage and the catarrh of old women. It is contraindicated where the appendages are inflamed, at least in acute cases; in submucous myomata and polypi; in putrid abortions, before the complete evacuation of the uterus; and where operable malignant disease has not been with certainty excluded.

My personal experience of this new method of treatment is practically nil. I believe, however, that in those obstinate cases of hæmorrhages and catarrh, which affect women after the child-bearing period, there is no room to doubt that it is an important and valuable addition to our resources, and one that will render hysterectomy less often a necessity. But, although the good results reported in younger women render me hopeful as to its future, yet there is one point which debars my adopting it in such cases, until it is further elucidated by the experience of others, and that is whether a dosage is possible so as to avoid obliteration of the uterine cavity. Pincus maintains that it is, and that we can procure any degree of cauterisation we desire, from the most superficial scald to the complete destruction of the membrane and obliteration of the uterine cavity; and that an undesired obliteration can only result from neglect of the rules which he has formulated. Menge, Flatau, and others say, however, that this is not the case, that an exact dosage is impossible, and that obliteration of the cavity can never with certainty be excluded.

Finally, to summarise my views as to the treatment of endometritis.

Septic forms require active antiseptic treatment.

In those forms of chronic endometritis in which hæmorrhage is a prominent symptom, especially where an exact diagnosis is required, the curette is advisable.

Where leucorrhœa is the chief characteristic, or where the curette has failed, a powerful caustic is required; and of those which have proved effectual, chloride of zinc is perhaps the most certain. But we may hope in the near future to see it replaced by some better method, possibly by formalin and atmocausis.

THE USE OF THE RECEPTION-HOUSE IN INFECTIOUS DISEASES.

BY JOHN KNIGHT M.D., D.P.H. CAMB.,
Assistant to the Medical Officer of Health for Glasgow.

ALTHOUGH a valuable factor in the repression of the graver infectious diseases, the reception-house has scarcely received the attention which it merits, and it may not be superfluous to describe the part which it plays in public health administration.

Originally instituted in Glasgow, it has now been adopted by many Scottish local authorities; but, up till the present time, the English Public Health Acts contain no provisions regarding it.

Its services were first requisitioned in coping with typhus fever, but latterly it was used in connection with outbreaks of small-pox, and still more recently of bubonic plague.

The first reception-house was acquired in 1872, but it was not until 1890 that statutory powers were conferred for its use. The new Public Public Health Scotland Act (1897) has considerably widened its sphere of influence by empowering all local authorities to institute a reception-house, and, at the same time has enabled its services to be of greater value, by facilitating its operations.

From its inception, two main purposes have been served by the reception-house.

First of all, it gave temporary shelter to the inmates of a poor-class house, from which a case of infectious disease had been removed, whilst the miserable infected dwelling was undergoing cleansing and disinfection at the hands of the sanitary staff.

In the second place, it enabled those who had been considerably exposed to infection, and who were in all probability incubating the disease themselves, to be kept under observation for a given period. The Police Act of 1890 limited the use of the reception-house to those who had occupied the dwelling with the infectious patient, and the period of detention of the "contacts" was restricted to fourteen days.

But experience gradually showed the need for a more extended view of the infected area and persons being taken; and the general Act of 1897 conferred rather sweeping powers upon the local authority.

The need of such, and indeed, the need for a reception-house at all, was largely owing to one factor—the system of housing of the working and poorer classes in Scottish towns. Where the general type of housing gives, as in England, each household immediate access to the street or court, there are not the same facilities for the spread of the infection. But where, as in Glasgow, the poorer classes are closely-packed in large tenements, where the access to each household is obtained by a common stair, with, in many cases, dark and tortuous lobbies on each landing, the danger of infection spreading becomes much greater. The common passages facilitate the frequent meeting of the neighbours. The proximity of the dwellings favours constant visiting. The elder children play together on the street or court, whilst the younger, being timid to venture into the street, make the stair their playground.

Add to this the use in common of w.c. accommodation, wash-house, &c., and it can be readily seen that the tenement system, by facilitating the meeting of the inhabitants in so many ways, tends to increase the spread of infection. There can be no doubt that it was on account of this that the reception-house became an urgent necessity in a city like Glasgow. The general Act showed that this danger had at last been realised, as it enabled the local authority to deal, not only with the definitely infected house and its inmates, but with any or all of the other dwellings or inhabitants in the tenement. More extensive disinfective measures could thus be employed, and at the same time there was a greater likelihood of all who had in any way been exposed to infection being brought under proper medical supervision.

Removal of the inmates of the infected house to the reception-house enables complete cleansing and disinfection of their home to be carried out. But if the condition of detention in the reception-house for a given period were not attached, that institution would be shorn of the greater part of its value. Were the "contacts" allowed to return to their purified homes in the course of a day or two, there is every likelihood that some of their number would shortly afterwards develop the disease, which had been meantime incubating. This would necessitate renewed disinfection of the house, and would expose the other inmates to renewed infection. And one can imagine a series of such cases in one house, until all the inmates have taken the disease.

The reception-house not only obviates this re-infection of the house, but greatly lessens the risk which the "contacts" run of contracting new infection.

In dealing with reception-house inmates, the assumption is made that a disease is not infectious during the incubation period. Hence, no restriction has been placed upon their resuming employment during the period of observation, nor have any untoward results followed this practice.

As the reception-house is chiefly occupied by the working and poorer classes, it is important that it should be planted in the midst of an industrial locality. This will simplify the removal of the "contacts" to it, and, at the same time, will impose less inconvenience to their continuing at work.

The construction of the reception-house will be influenced to a considerable extent by the disease in connection with which it is intended to be used; and, if possible, it would be best to provide a separate house for each disease—typhus fever and small-pox.

Taking the case of small-pox "contacts" as presenting the simpler problem, one may briefly indicate in outline the plan of construction to be followed. Each small-pox "contact" is revaccinated, either before removal to the reception-house, or shortly after admission. One or more may subsequently sicken of the disease, owing to their having been vaccinated too late, after exposure to infection. But this new case does endanger the other inmates, as they are already revaccinated before any exposure to the new infection occurs. Hence, no attempt need be made, on this score at least, to separate the various families from one another. A large dormitory or ward for each sex, with separate bath and w.c. accommodation, is all that is required, with, of course, a common hall for dining and recreation. But, in the case of typhus fever, a somewhat different plan has to be followed. No specific prophylatic comparable to vaccination in small-pox is available, and the greatest care has to be exercised in keeping each family, or batch of "contacts," isolated from the others, at least, so far as sleeping accommodation is concerned. The risk run in meeting casually during the day-time is small, compared with the prolonged exposure to possible infection, which sleeping in the same apartment implies. The typhus reception-house should consist of a series of separate bedrooms, each containing one or more beds, according to their cubic space. Should the disease arise in any one family group, the other members of it have their clothing and bedding disinfected afresh, and their period of detention is extended by three weeks, so as to cover a new period of incubation. It will readily be understood that considerable hardship would be imposed were all the inmates to be subjected to renewed detention with the occurrence of each new case.

Next to the provision of proper sleeping accommodation, the facilities given for bathing and washing are of the greatest importance. "Contacts" arrive in batches, and unless ample bathing accommodation exists, great delay will ensue in getting them properly installed in their new abode. In addition, the class of people who form the large majority of reception-house inmates is such that requires every encouragement to personal cleanliness, and no excuse for neglect in this respect should be furnished by absence of proper facilities. The general routine of the reception-house is as follows:—

On admission, each "contact" has a complete bath—for the majority, this is an entirely novel, not to say rather formidable, experience. The infected clothing is meantime removed for washing and disinfection, and new clothing is supplied. The new inmate may then be permitted to mix freely with the others in the common room. If a small-pox "contact," he is revaccinated, should that operation not have been already performed. Small-pox "contacts" who have been successfully revaccinated some time before exposure to the present infection, are allowed to return home whenever house and clothing are completely disinfected. Those who have not been revaccinated until after exposure to infection are detained for at least fourteen days; typhus "contacts" are detained under observation for twenty-one days.

Each inmate is charged to report at once to the matron the slightest indication of illness. If a typhus "contact," his temperature is taken twice daily. In spite of instructions, attempts are constantly made to conceal illness, and the utmost vigilance has to be maintained.

When the first undoubted signs of a febrile disease, not due to any obviously local cause, are ascertained, the patient is forthwith removed to an observation ward at the isolation hospital.

Whenever the clothing is returned from the disinfection process, the "contact" resumes his work; this generally implies a delay of twenty-four hours at the outside.

The inmates being mostly of the poorer class, large families are the rule, and young children form no inconsiderable proportion. These introduce a new element of danger. Many of them are ill-fed, broken down in general health, and infested with vermin. The greatest care has to be exercised in keeping down scabies, phthiriasis, ringworm, and other parasitic diseases. In addition, it is not uncommon to find an outbreak of measles or scarlatina occuring, owing to some child incubating the disease when admitted. In the reception-house, the "contacts" are compelled to observe what is generally for them a painfully high standard of personal cleanliness; and the hygienic conditions of their temporary abode are far in advance of those to which they have been accustomed. By this general cleanliness of person and surroundings, the risk of infection being conveyed, should a "contact" develop the disease, is very considerably lessened. The early recognition of the disease, and the prompt removal to hospital of the patient, conduce to a like end.

The advantages conferred by the reception-house may be briefly summed up as follows:—

1. Complete disinfection of the house and its contents is rendered possible.

2. The "contacts" are at once freed from infection lurking on their clothing and persons.

3. All those known to have been exposed to infection are at once isolated from the general community.

4. Proper medical supervision can be maintained, and early recognition of the disease, resulting in lessened risk of infection to others and a better chance of recovery to the patient, is secured.

5. The better hygienic conditions under which the "contacts" are compelled to live, and the improved personal habits enforced, are undoubtedly of considerable educational value.

EUCALYPTUS IN THE TREATMENT OF DIABETES.

By ARCH. GALBRAITH FAULDS, M.B., C.M.,
Assistant Surgeon, Glasgow Royal Infirmary.

The late Mr. James Dick, of guttapercha fame, was one of the rare examples of a poor lad who, through patience, industry, and business capacity, worked himself into the position of a millionaire, of whom Scotland, and particularly Glasgow, to-day is justly proud. The vast wealth which he accumulated during the latter half of his life brought out the true natural character of the man; for he was known throughout Scotland as a grand specimen of a Scottish gentleman, with a large heart and an acute philanthropic ear, and as a just judge of merit in any form—for, whether in the fine arts or in honest labour, Mr. Dick never lost an opportunity of encouraging a worker. I have heard him tell the simple story of his life—the hard work, the pleasure of being able to work, the small pay and the value of money in his boyhood, the success that came gradually but surely, until, as he often said, "it went on itself now." Considering his great experience and extraordinary gifts, he was one of the most humble and modest of men. Although, in appearance, he did not strike one as being an Apollo of commercial exactitudes, one had only to engage him in some business transaction to find out his talents, and I often wondered at his clear and correct arithmetical calculations at his advanced age. To strangers he was always courteous, and among those with whom he was familiar, he was very cheerful. Besides finding pleasure in art, astronomy, and music, he took a keen interest in the progress of medical science, and often put himself to enormous pains in trying to discover a cure for any disease. To illustrate his devotion to medical science is the chief purpose for which this story of the treatment of diabetes by eucalyptus is now submitted.

Some years ago Mr. Dick was travelling in New Zealand, and knowing that an old schoolmate of his was in the country, he determined to hunt him up. After considerable journeying he found his old friend, and a most agreeable interview followed. During this meeting the settler complained that his health had failed some years after he had settled in New Zealand, and that the doctors had treated him for diabetes, with but little effect. One day, however, having contracted a horrible cold or influenza, a neighbouring old native lady informed him that if he went to a certain eucalyptus tree and gathered some of the fresh leaves, and partook of an infusion of them twice or three times daily, it would cure his influenza. The patient acted upon this advice at the earliest opportunity. He made an infusion of the fresh leaves, and took a small teacupful night and morning, with the result that it not only cured his influenza, but caused his diabetes also to vanish with all its symptoms.

This story arrested the attention of Mr. Dick, who asked to see the tree, made a "strong mental note" of the simple cure, and collected some of the leaves to take home, with the intention of announcing this new and seeming marvellous cure of diabetes to his medical friends. He expected that it would be taken up by the faculty, and prove a blessing to those affected by this dreaded disease. He found, however, that his expectations, like most others, were doomed. His medical friends, myself included, listened with interest to his narrative, but owing to the want of scientific accuracy, or perhaps to the want of more accurate details, together with the fact that we knew that eucalyptus had been recommended in its time for nearly every ailment under heaven, the subject was dropped, with the promise that when a suitable case cropped up it would be considered, and perhaps tried. Nothing daunted, our friend still kept up a constant interest in the matter, and carried on an extensive inquiry among the medical authorities in Australia and New Zealand, and collected an enormous amount of correspondence on the subject, but did not find any evidence that eucalyptus had ever been tried in the treatment of diabetes. About five months ago, however, during an interview I had with him, this subject of eucalyptus came up again, and my friend, in good humoured language, maligned my profession for not taking more interest in his new discovery, and he requested me to find out the "exact genus of tree" which the leaf indicated, to make the infusion, and find out what it contained, to experiment with these, and to influence my medical compeers, who had cases of diabetes, to try this form of treatment.

I remember getting a sound piece of advice from my schoolmaster as I was leaving his learned guidance to go to college for medical studies. He told me to try and find out a certain cure for any one disease, and not only would I make my fortune, but I would immortalise my name. I need hardly say I have yet to accomplish these tasks, and I am also certain that the eucalyptus treatment in diabetes, although a valuable contribution to the subject of diabetes and its treatment, falls far short of a certain cure for all cases of glycosuria. It is a fact known to the medical profession, that the same disease in different individuals requires quite different modes of treatment, and the most important duty of the medical attendant is not so much to study the disease as to study the unfortunate victim.

Some little time after this I told my friend, Dr. T. K. Monro, in his wards at the Glasgow Royal Infirmary, this story of the treatment of glycosuria by eucalyptus leaves. He informed me that he had a bad case of diabetes in his wards, and if I, he said, could give him some of the leaves he would see what effect the infusion of them had on the amount of sugar in the urine passed by the patient. The patient was accordingly put upon this new form of treatment. The nurse who made the infusion did so in a teapot, taking one tablespoonful of the broken leaves (about 60 grains by weight), and added 6 oz. of water, allowing it to infuse, as is done with tea, for half an hour, and then adding a little saccharin. She gave this to the patient twice daily. The most immediate result followed, for, after two or three doses, the amount of sugar in the urine fell from 40 grains to a mere trace, which could not be estimated. This was a man of 29 years of age, who weighed 9 stones, and had suffered from diabetes for a few months.

After such a good beginning, I had the treatment tried on a girl of 18 years, who, for six months, had suffered all the drenching symptoms of diabetes, and was passing 60 grains of sugar to the ounce of urine. After four days of the infusion of the leaves of eucalyptus, there was only 1 grain to the ounce, and on the sixth day of the treatment, no sugar could be detected. She was then put on farinaceous diet, and the eucalyptus tea continued, and this has resulted in a marvellous general improvement in a very short time. Up till a week ago, she had no recurrence of the symptoms that would lead her to suspect that the effect of the treatment was only temporary. This immediate and satisfactory effect in the reduction of sugar in diabetic urine was spoken of by me to several of my medical friends, and one of them about this time sent me a lady, 66 years of age, who had suffered from glycosuria for eighteen months. She was very stout, and her out-crying and distressing symptom was vulvar pruritus. Her urine contained large quantities of sugar, although, as she said, her weight had during that time fallen off greatly. She had not gained strength as she expected she would when she lost flesh, and still felt the weakness and want of energy for everything excepting relieving her pruritus. I here also had the most beneficial results from a course of treatment by the eucalyptus infusion. The pruritus was the first thing to disappear, and one fortnight after her treatment commenced, I received a letter from her doctor, which I quote here:—"Mrs. B.'s improvement is magical—pruritus, boils, glycosuria, and thirst all gone."

I acquainted Mr. Dick with these facts, which very much delighted him. He at once said that the profession owed him a great debt of gratitude, and jocularly said he expected to be capped an M.D. for his trouble. I, however, dispersed his hopes by pointing out that, although this form of treatment suited some cases of diabetes and proved a benefit to them, it did not follow that it would suit all. I had not said a word about "cure," which yet remained to be seen, and I therefore declined to publish anything in the shape of a report, until I had investigated the matter in other ways. Some other cases were treated successfully, and a greater number unsuccessfully, as we shall see later on.

Let us here consider briefly some interesting points with regard to the Australian blue-gum tree as a therapeutic agent. My first experience of it was one that impressed itself indelibly on my mind, and caused me to wonder very much at its great influence in hot climes. In the year 1890, when travelling in Central India, we stopped at a place called Balaspore to breakfast, and to wait on a train connection. A friend who was with me, a Glasgow graduate in medicine and in the Indian military service, took me to a hill which commanded a view of the barer part of the jungle, where it is alleged one often sees the Bengal tiger in all his natural glory. To get a better view, and perhaps from a more honest desire of being secure, I climbed a tree, which had a most pungent odour. When amongst its leaves I became very sick, from the inhalation of the strong vapour, and I had to descend very quickly. I had a bad forenoon, and to this day I cannot endure the odour of eucalyptus.

The tree I had climbed was of the Australian blue-gum order, and during our subsequent travelling my Anglo-Indian friend bore testimony to the great reputation the leaves, bark, and sawdust of this tree enjoyed in India in the treatment of disease. The leaves in particular had febrifugal properties, for given either in powder or as an infusion, the effect was specific in intermittent and other fevers. The sawdust was used as a poultice in alleviating pain. The crushed leaves were utilised as a dressing for open wounds; the bark was bruised and eaten in small quantities for intestinal worms. The tincture was also given with considerable success in bronchitis, asthma, whooping-cough, and hysterical fits, and, in fact, was highly recommended as an antiseptic in other disorders, for which it is given by us at home, but no mention was made of diabetes. The properties of the tree in destroying the miasma of marshy districts are well known, and the gradual disappearance of mosquitoes from some districts is ascribed to it. The influence it exerts in this way is more likely to be due to the great drainage that is effected by the enormous absorption of water that goes on at the roots of this tree, than to any effect the evaporation of the volatile oil from its leaves will have on the atmosphere; for the eucalyptus tree has a brisk circulation, and thrives best in hot, swampy districts.

For medicinal purposes the leaves are the most important, and especially those of the eucalyptus globulus, eucalyptus resinifera, and the eucalyptus oleosa varieties, as they contain much of the essential oil. The sample given me for the treatment of diabetes is from the globulus variety. The leaves are long and narrow and from the mature tree, and when held up to the light they are seen to be studded with dried-up oil glands. When a watery infusion is made, it is found to contain the ordinary eucalyptus oil. In ascertaining what was the substance in the infusion that had caused the arresting of the sugar in glycosuria, some very interesting facts were revealed. In a case that was treated by the infusion, it was found that, as long as the patient took it, the sugar was much reduced; but when eucalyptus oil was substituted, there was no effect. The analysis of this infusion was therefore gone into very minutely, an epitome of which only I shall present here. It was found that, with the exception of a white crystalline light substance, precipitated by tannin, and having a chemical formula of $C_8H_7N_4O_2$, the essential oil was the only substance that distilled over, and that its active principle was a substance called eucalyptol. This substance is a colourless liquid, has a most pungent odour, like that of the oil of cajuput, and is a powerful irritant. It, again, is a mixture of terpene and cymol, both hydrocarbons, and of no ascertained therapeutic value.

When eucalyptol was given in doses of 10 to 15 grains, it was found to reduce the temperature, derange the stomach, and depress the cardiac pulsations, but it had no influence on the excretion of sugar. The patient's breath indicated its elimination by the lungs, but it could not be detected in the urine. Large quantities were tried of the residue, without any other effect than in some cases of increasing the saccharine excretion. Now, what seems very interesting is the fact that, when the patient gets a fresh warm infusion, the sugar at once dropped in quantity, and in some cases from 60 grains to half a grain per ounce. It is evident, then, that there is not any one of the substances contained in this infusion that arrests the excretion of sugar, but evidently a combination of them have this effect, *i.e.*, there seems no alkaloid in it which, when given alone, has the power of influencing the amount of glucose in diabetic urine. Then how, and why does the fresh infusion act so promptly? I am inclined to think that, just as a newly infused cup of tea is an enjoyable beverage, not on account of the action of its alkaloid theine alone, but because it contains, in addition, a mixture of a volatile oil and tannin, so does tea from eucalyptus (which we have already seen has antiseptic properties) act in checking tissue metamorphosis, which is so active in this disease.

The causation of glycosuria is still wrapped in mystery, but it is probably produced by a variety of causes, such as gout, cold, nervous exhaustion, and over-indulgence in food and drink. In fact, any condition that tends to limit or prevent the appropriation of sugar, must lead to an excess of sugar in the blood, and thus to glycosuria. In these cases it seems to me that, in the earlier stage, the eucalyptus treatment will prove beneficial; but, where the disease has been inherited, or where the patient's antecedents or immediate relatives are neurotic (in which case the probable cause is a progressive degeneration of the vaso-motor centres or system which will disturb the equilibrium of the blood-supply to the hepatic cells), this treatment, like others, will be of no avail. And such has been my experience; for, in 41 cases treated with eucalyptus, 11 came from talented families, or were neurotics; 7 were hard brain workers, and 4 inherited the actual disease.

In these 22, the eucalyptus treatment had no effect. Add to these 4 cases in which the disease had gone to the stage of approaching coma before this treatment had been commenced, and we get the total number of unsuccessful cases. The remaining 15 showed a total disappearance of the disease, and, so far as can be yet judged, are completely cured. I am, however, inclined to think that the Dick treatment, if I might call it so, has as yet had a very imperfect trial; for one must remember that we have been carrying on this measure with the disadvantage of having old and not freshly-gathered leaves, and it is hard to say how many of these 26 cases that were unsuccessfully treated would be added to the successful list, were we able to procure a fresh infusion of the green leaves. Again, it is difficult to say what effect this treatment would have had on those chronic cases which were in the last stages of the disease, had this treatment been tried much earlier. Besides, some of these cases were treated without dieting, and the tea was given or made in a perfunctory manner, so that the black list is made as black as possible. I am aware that codeia has a similar power claimed for it, but I am not aware that it has the sustaining effects of our Australian innovation. That a layman like Mr. Dick should introduce a new remedy into medicine is, although by no means new, all the same extraordinary. For a man whose mind was so fully occupied by business, philanthropy, and gigantic mining schemes, to have taken this keen interest in medical science, and persevered with a disease and its treatment by eucalyptus, is, I think, not only exceptional, but very creditable. I offer it now as a contribution to the treatment of glycosuria, with the persuasion that, along with dieting, it will be found an important and valuable remedy, especially in the earlier stages of the disease.

CORRESPONDENCE.

DISCUSSION ON PNEUMONIA.

To the Editors of the "Glasgow Medical Journal."

Sirs,—In the last number of this *Journal* Sir William Gairdner refers to some remarks of mine on the use of digitalis in pneumonia. There has been misunderstanding on both sides. His views as to large doses of that drug are quite familiar to me, and were not in my mind in this connection. I sincerely regret, however, having attributed to him a view which I am glad to find that he does not hold, viz., that moderate doses are a "poison in pneumonia."

On the other hand, in saying that I had, perhaps, no "very rational" ground for always giving digitalis in pneumonia, I used the word as meaning "capable of clear and ready proof." One may not be quite satisfied with all the evidence in favour of giving a drug, and yet, until he has proof of its harmfulness, may not be justified in withholding it. One *has* to act in this way daily, waiting for more light. The negative attitude, therefore, of withholding a drug, may not only be not rational, but be irrational. Put in a rough and ready way, the position might be stated thus:—

(1) First and of course, cardiac failure is a frequent cause of death in pneumonia; anticipate this by giving digitalis, the best known cardiac tonic.

(2) I have never seen moderate doses of digitalis do any harm in pneumonia.

(3) With a death-rate of 5 per cent or 6 per cent, which is a fourth of the hospital death-rate, I do not see much reason for eliminating digitalis. (This death-rate, as I have said, is founded on too small a number of cases—nineteen in all—to be convincing; but it is my own experience, and I have to some extent to be guided by my experience.)

Now (1) is not a thoroughly scientific statement, and therefore not quite a "rational" statement (there are several forms of cardiac failure, and digitalis does not suit all of them); but, in the light of (2) and (3) one is justified in thinking that (1) may be shown to be a rational statement, and in adhering to digitalis. Further, this was not the only or the chief element in the treatment I mentioned, and therefore one cannot make accurate, scientific deductions from such treatment; and yet, in the light of the results, it would be irrational to withhold digitalis.

Putting aside, however, this rough and ready method of arguing, one may consider the more strictly scientific grounds for using digitalis. I did adduce at the discussion reasons for its use; but, as I was restricted by time, did not go into these, and did not state any in the published report—which, of course, was all Sir William Gairdner had to go by—as they were, to some extent, stated by others. Cardiac failure is a frequent mode of death in pneumonia. This failure differs from that in influenza, diphtheria, and enteric, in being largely the result of acute overwork, chiefly of the right ventricle. There are grounds for thinking that some degree of dilatation is more frequent than is commonly supposed. At anyrate, Dr. Lindsay Steven stated that he had seen such dilatation in his *post-mortem* experience; and the frequency of pathological conditions and of recovery from them, is vastly greater than our *post-mortem* experience might lead us to think. Now, digitalis is a reasonable, perhaps the most reasonable, drug to use for this condition (though I rarely use it without nux vomica); and in pneumonia we must anticipate. To wait till cardiac failure sets in, is less rational than trying to prevent it. And Professor Stockman stated that digitalis must be given for a day or two before its best effects are got. Of course, the effects of the drug must be carefully watched. Again, digitalis is a poison to the pneumococcus. Its bactericidal action, when diluted by the blood, is probably slight, but in pneumonia "every little helps;" and if the drug can aid the leucocytosis, which seems to be essential to recovery, one may reasonably give digitalis on this ground also, till the contrary is proved.

One suggestion as to the mode of action of digitalis in general I would venture to make. Woods Hutchinson in his suggestive book, *Studies in Human and Comparative Pathology*, advances cogent reasons for believing that the muscular cells of the arterial walls have the power of rhythmical contraction (*cf.* Sir William Gairdner's ideas as to the "scavenger" action of the similar muscles of the bronchial tubes). These reasons need not be stated here, but he shows how this idea helps to throw light on many clinical puzzles. (He quotes Dr. Simon Baruch to the effect that "the Almighty himself could not have created an apparatus possessing sufficient force to propel a viscid fluid, like blood, through the fine vessels of the skin, did not the latter possess propulsive powers.") And this idea seems to me to throw light on the action of digitalis. Digitalis acts on the heart by slowing and strengthening its contractions; but it also contracts the arterioles, and, on the usual theory of the non-rhythmical but tetanic action of the arterial muscles, must thus increase the peripheral resistance to the heart, and therefore increase its work. If, however, these muscles contract rhythmically like the heart itself, then digitalis, by aiding this pumping action as well as that of the heart, will help the latter. (When this action became "cumulative" and tetanic, we should have the "cumulative action" of digitalis upsetting the heart.) This action of digitalis would also hold in pneumonia, and would be aided by the action of ice, which I advocated to be applied to the chest, but which Dr. Barr simply applies to the abdomen, in order, in addition to reducing temperature, to stimulate the splanchnics, and so act on the blood-vessels. Again, expressing my apologies to Sir William Gairdner,—I remain, yours truly,

JAMES ADAM.

HAMILTON.

CURRENT TOPICS.

UNIVERSITY OF GLASGOW.—List of Degrees in Medicine conferred on 22nd April, 1902:—

DOCTORS OF MEDICINE (M.D.)

I.—WITH HONOURS.

Alexander Robert Ferguson, M.B., C.M., England. *Thesis*—"The Leucocytosis of Variola, with a Study of the Hæmatopoietic Organs in the Disease, and also of the Lesions of the Skin."

II.—ORDINARY DEGREE.

John Knight, M.B., C.M., Scotland. *Thesis*—"Small-pox: its Diagnosis and Public Health Administration."

Dugald Campbell Watt, M.B., C.M., Scotland. *Thesis*—"Variola as it affects the Native Races of South Africa, with a Discussion on the existence of Amaas or Kaffir Pox."

UNIVERSITY OF GLASGOW.—The following have passed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B, Botany; Z, Zoology; P, Physics; C, Chemistry):—

George Victor Anderson (P, C).
James Montgomery Anderson (Z, C).
Andrew Hamilton Arnott (P).
George Duncan Morrison Beaton (P).
Donald Price Bremner (Z, P).
William Archibald Campbell (Z, C).
Donald Livingston Carmichael (C).
Charles Game Angus Chislett (B, C).
Henry Howard Christie (Z, C).
John Sawers Clark (Z, C).
Andrew Donaldson Cowan (B, P).
Thomas Lawson Craig (Z, C).
Arthur Muir Crawford (Z, C).
Robert Donald (Z).
Richard John Driscoll (B).
James Dunbar (B).
Allan Dunsmuir (Z).
Eric John Dyke (P).
Ernest Milne Eaton (Z, C).
William Miller Fairlie (Z, C).
Thomas Scott Forrest (P, C).
James Wilfred Georgeson (Z, P).
William Gilbert (Z, C).
William Gilfillan (C).
Percy Frederick Grant (Z, C).
Arnold Harris Gray (B, Z, P).
Robert Neil Guthrie (Z, C).
John Hammond (P).

William Towers Hardie (Z).
Robert M'Cowan Hill (P).
John Keys (Z, C).
James Dunlop Kidd (Z).
George Hugh Logan (B, P).
Angus Macaulay (B).
Alexander M'Call (Z, C).
John M'Cartney (P).
Thomas M'Cosh (P, C).
David MacDonald (Z, C).
James M'Farlane (Z, C).
John Robert M'Gilvray (Z, C).
William Anderson M'Kellar (Z).
Thomas Cooper Mackenzie (Z).
William Ferguson Mackenzie (Z, C).
William Macleod (B, P, C).
John M'Millan (B, Z, P, C).
Alister Argyle Campbell M'Neill (Z, C).
Charles James Colquhoun Macquarie, (Z, C).
Andrew Maguire (Z, P).
Robert Marshall (B, Z).
Robert May (P).
Allan Frederick Miller (C).
John Miller (Z, C).
Robert Stewart Miller (Z).
William Miller (Z).
Peter Mitchell M.A. (B, Z).
Robert Wright Mitchell (Z).
William Struthers Moore (B, P).
Archibald Naismith (B, Z).
Patrick Joseph O'Hare (B, P).
John Oswald (Z, P).
James Hogg Paul (Z, C).
Daniel M'Kinlay Reid (Z, P).
John Reid (B, P).
Frederick Gordon Robertson (Z, C).
James Henry Anderson Robertson (Z, P).
Murdoch Mann Rodger (B).
William James Rutherfurd (Z, C).
John Sharp (Z, C).
Robert Wilfred Simpson (P).
Robert Alexander Slater (C).
Thomas Baillie Smith (Z, C).
James Stevenson (C).
John Stevenson (Z, C).
Archibald Stewart (Z, P).
John Torrance Weir Stewart (B, Z).
Thomas Strain (P).
David Laurence Alexander Tate (B, Z).
Charles Samson Thomson (Z, C).
Hugh White (Z).
David John Williams (Z).
George Haswell Wilson (Z, C).
Samuel Wilson, M.A. (Z, C).
William Alexander Wilson (P).
Thomas Winning, M.A. (B, Z).

WOMEN.

Jeannie Montgomery Andrew (P, C).
Annie Rennie Hird (P, C).
Rose Isobel Hudson (P, C).
Agnes M'Phun (Z).
Edith Oversby (P, C).
Vera Dagmar Reis (P, C).
Margaret Baillie Taylor (C).
Christina Gibson Thomlinson (B, Z).

The following have passed the second professional examination in the subjects indicated (A, Anatomy; P, Physiology; M, Materia Medica and Therapeutics):—

Scott Campbell Adam (A, P).
Archibald Craig Amy (A, P, M).
Henry Graeme Anderson (A, P).
James Richard Sunner Anderson (A).
John William Arthur (M).
Allan Robertson Barrowman (A, P).
George Beattie (P, M).
Robert Daniels Bell, M.A. (A, P).
David Blackley (A, P, M).
George Thomson Bogle (M).
Robert George Bradford (A).
Forrest Brechin (A, P, M).
Thomas Brodie (P, M).
Charles Brown (P, M).
John Brown (A).
George Yuille Caldwell (A, P, M).
Peter Carrick, M.A. (A, P, M).
Robert Buchanan Carslaw, M.A. (A, P).
James Alexander Cowie, B.A., B.Sc. (A, P, M).
John Craig Crawford (P, M).
Thomas Thornton Macklin Dishington (A, P, M).
Hugh M'Millan Donaldson (A).
George Horn Downie (A).
Charles Milligan Drew, M.A. (A, M).
Hugh Harvey Fulton (A, P).
William Harold Gillatt (A, P).
James Glover (M).
David Livingstone Graham (A, P).
John Graham (A, P).
Donald John Gollan Grant (A, P, M).
George Munn Gray (A, P).
Louis Leisler Greig (A, P).

Alexander Robertson Forrest Hay (A, P).
John Cochrane Henderson (A, P).
Arthur Innes (A, P).
Alexander Jamieson (A).
Robert Dallas Kennedy (A).
John Kerr (M).
George Notman Kirkwood (A, P).
Robert Thomson Leiper (A, P, M).
Thomas Symington Macaulay (A, P).
Donald Carmichael M'Cormick (A, P).
Joseph Glaister M'Cutcheon (P).
John Finlay Macdonald (M).
James Boston M'Ewan (A, P).
Tom Duncan M'Ewan (A, P).
Duncan Macfadyen (A, P).
John M'Farlane (A, P).
Robert Macfarlane (A, P).
Robert Clark M'Guire (A, P, M).
James M'Houl (A, P).
Milne M'Intyre (A, P, M).
Ronald Mackinnon (A, P, M).
David James M'Leish, M.A. (A, P).
Roderick MacLeod (M).
Norman Smith MacNaughtan (M).
Andrew Brown M'Pherson (P, M).
William Main (A, M).
Andrew Meek (A, P, M).
Peter Millar (A).
Gavin Denholme Muir (P).
John Muir (A, P).
Macdonald Munro (A, P).
Alexander Harper Napier (A).
George Clement Nielson (A, P).
Thomas Orr (P, M).
Howard Henderson Patrick (A, P).
Arthur Geoghegan Paxton (M).
John Clegg Pickup (A, P).
Alexander M'Millan Pollock (M).
Andrew Maclean Pollock (A, P).
James Porter (A, P).
William Murdoch Rae (A, M).
Donald Ronald Reid (A, P, M).
Daniel Stevenson Richmond (A).
James Watson Richmond (A).
Berkeley Hope Robertson, M.A. (A, P).
Robert Thin Craig Robertson (P).
Campbell Ross (M).
John Samson (P).
Lawrence Drew Shaw (A).
Malcolm Alexander Sinclair (P, M).
George Goldie Smith (A, P).
James Alexander Somerville (P, M).
John Stewart (P).
Norman Burgess Stewart (M).
William Craig Stewart (A, P, M).
Murray Ross Taylor (A, P, M).
William Templeton (A, P).
James White Thomson (A, P).
Robert Watson (A).
Archibald Crombie West (A, P).
George Henry Wildish (A).
George Wilson (P, M).
Robert M'Nair Wilson (M).
James Wyper (P, M).
Watson Young (A).

WOMEN.

Jeanie Auld (A).
Annie Agnes Baird (A, M).
Annie M'Caig Black (A).
Agnes Wallace Cameron (A).
Roberta Campbell (A, P, M).
Ethel Lily Chapman (A, M).
Jane Hamilton M'Ilroy, M.A., B.Sc. (A).
Jane Stark M'Lauchlan (A, P, M).
Alice Wesley Maclean (A, M).
Margaret Walker Miller (M).
Jessie Emily Munro (P).
Charlotte Reid Park (A, M).
Ethel Jane Mildred Pryce (A, M).
Jane Reid Shaw (A, P).
Lily Smellie (A, P).
Elizabeth Taylor Talbert (M).
Annie May Yates (P).

The following have passed the third professional examination in the subjects indicated (P, Pathology; M, Medical Jurisprudence and Public Health):—

Robert Adam (P, M).
William Kirkpatrick Anderson (P, M).
Thomas Ballantyne (M).
Andrew Farm Bell (M).
Thomas Bennett, M.A. (M).
Archibald Grainger Bisset (P, M).
Alexander Blair (P, M).
James Campbell Bringan (P, M).
Robert Bruce (M).
Daniel Lyall Carmichael (M).
Alexander Erskine Clark (M).
Andrew Connal (P, M).
Hugh Collin Davies (P, M).
Mitchell Innes Dick (P).
David Dickie (P, M).
David Garfield Dykes (P, M).
James Eadie (P, M).
Cunison Charles Finlator (P, M).

Eric Dalrymple Gairdner (P, M).
John Ritchie Gilmour (P).
John Hanson, M.A. (P, M).
William Harvey (P).
Leslie Charles Broughton Head (P, M).
Neil M‘Coll Hutchison (P, M).
Malcolm Hutton, M.A., B.Sc. (P, M).
John Muir Kelly (P, M).
Alexander Dingwall Kennedy (M).
Robert Laurie (P, M).
Archibald Leitch (P, M).
Thomas Walker Love (P, M).
Donald Macaulay (P).
James Duff M‘Culloch (P, M).
David Duncan Fraser Macintyre (P, M).
John Matheson M‘Kellar (P).
Norman Alexander Macleod (P).
James Anthony Macvea (P, M).
Harry Somerville Martyn, M.A. (M).
Alexander Matheson, M.A., B.Sc. (P, M).
Spencer Mort (P, M).
Gavin Muir (P, M).
David Penman (M).
William Rankin, M.A. (P, M).
Daniel Falconer Riddell, M.A. (P, M).
Peter Hamilton Robertson (P).
Frank Donald Scott (P).
William Garrow Shand (P, M).
John Black Stevenson (P).
William David Henderson Stevenson, M.A. (P).
William Stewart (P, M).
Arthur William Sutherland, M.A. (P, M).
John Wilson Sutherland (P, M).
Peter Lindsay Sutherland (P, M).
John Restell Thomas (P).
John Turnbull (P).
Joseph Walker, M.A. (P).
Hugh Fleming Warwick (M).
William Norman West Watson (P, M).
Robert Tait Wells, M.A. (P).
John Forrest Weston (P).
Griffith John Williams (P, M).
James Wilson (P, M).
Eldred Wright (P, M).

WOMEN.

Mary Charlotte Cameron (P, M).
Jane Campbell (P, M).
Jessie Galloway Duncan (M).
Kate Fraser, B.Sc. (P, M).
Mary Lauchline M‘Neill (M).
Anna Pollock Martin (P, M).
Eliza Jane Miller (P, M).
Isabel Deane Mitchell (P, M).
Margaret Hossack Smart (P, M).
Jessie Marie Stewart (P, M).

At the recent professional examinations for the degrees of M.B., Ch.B., the following candidates passed with distinction in the subjects indicated :—

First Examination.—In Botany and Zoology: Peter Mitchell, M.A. *In Botany:* Charles Game Angus Chislett, Andrew Donaldson Cowan. *In Zoology:* Thomas Lawson Craig, Ernest Milne Eaton, Robert Neil Guthrie, William Ferguson M‘Kenzie, Charles James Colquhoun Macquarie, John Miller, Robert Wright Mitchell, John Stevenson. *In Physics:* Jeanie Montgomery Andrew, Robert M‘Cowan Hill, Rose Isobel Hudson, William Struthers Moore, Vera Dagmar Reis. *In Chemistry:* William Gilbert, William James Rutherfurd.

Second Examination.—In Anatomy and Physiology: Robert Buchanan Carslaw, M.A.; Hugh Harvey Fulton, John Graham, George Munn Gray, James White Thomson. *In Anatomy:* Arthur Innes, David James M‘Leish, M.A. *In Physiology:* Robert Thomson Leiper, Berkeley Hope Robertson, M.A.; George Goldie Smith, William Templeton. *In Materia Medica and Therapeutics:* James Glover, Robert M‘Nair Wilson.

Third Examination.—In Pathology and in Medical Jurisprudence and Public Health: Peter Lindsay Sutherland. *In Pathology:* Malcolm Hutton, M.A., B.Sc.; Alexander Matheson, M.A., B.Sc.; William David Henderson Stevenson, M.A.; John Wilson Sutherland. *In Medical Jurisprudence and Public Health:* Spencer Mort.

WESTERN INFIRMARY.—At a meeting of the Managers held in the Secretary's Office on 29th April, the following appointments were made:—Dr. T. Kennedy Dalziel, Visiting Surgeon; Dr. R. B. Ness, Assistant Physician; Dr. John Cowan and Dr. Alfred Webster, full Dispensary Physicians; Dr. Robert Fullarton and Dr. J. Campbell M'Clure, extra Dispensary Physicians.

WESTERN INFIRMARY.—The following have been appointed resident assistants for the summer six months:—

House Physicians.—D. Ross Kilpatrick, M.B., Ch.B., assistant to Dr. M'Call Anderson; James Davidson, M.B., Ch.B., assistant to Dr. Finlayson; John Anderson, M.B., Ch.B., assistant to Dr. Gemmell; J. King Patrick, M.B., Ch.B., assistant to Dr. Stockman.

House Surgeons.—Edw. Magoveny, M.B., Ch.B., assistant to Dr. Patterson; J. Goodwin Tomkinson, M.B., Ch.B., assistant to Sir H. C. Cameron; Donald Steel and Walter J. M'Feat, M.B., Ch.B., assistant to Dr. Macewen; Reginald N. Dunlop, M.B., Ch.B., assistant to Dr. Renton; Matthew Aikman, M.A., M.B., Ch.B., assistant to Dr. Beatson.

Out-door.—E. Seymour Chapman, M.B., Ch.B.

NEW PREPARATIONS, &c.

TABLOID MERCURY IODIDE, YELLOW, GR. ⅛ (·008 gm.) (London: Burroughs Wellcome & Co.).—The iodide is supplied in this tabloid as a pure mercurous iodide of a yellow colour, being free from the metallic mercury which gives the colour to the green iodide. It is claimed that the present preparation is, with ordinary care, sufficiently stable for safe therapeutic employment. The bottles contain 100 tabloids, and it is recommended that they be protected from the light as much as possible.

"SOLOID" SODIUM HYDROXIDE, GR. 2 (0·13 gm.) AND "SOLOID" PYROGALLIC ACID, GR. ½ (0·032 gm.) (London: Burroughs Wellcome & Co.).—These products have been introduced to provide a ready means of estimating the degree of oxygenation of a sewage effluent. It is generally admitted that a sewage effluent, which is well charged with oxygen, will almost certainly be satisfactory, whereas if the effluent contains little or no free oxygen it will be unsatisfactory. The examination by means of the above "soloid" products may be conducted as follows:—Fill a wide-mouthed bottle, holding about 4 oz., with the effluent as it runs from the beds; drop in one "soloid" product of each reagent, and insert the stopper carefully, and in such a way as not to include any bubble of air. Shake the bottle for about half a minute and note the effect. If the liquid remain colourless, or only faintly coloured, the oxygenation is not satisfactory. If it assume a rich red-brown colour, the oxygenation is satisfactory. The "soloids" are each issued in bottles containing 25.

Tabloid Apomorphine Compound (London: Burroughs Wellcome & Co.).—The formula of this preparation is—

Apomorphine hydrochloride, . .	gr. $\frac{1}{50}$ (0·0013 gm.)
Ammonium chloride, ...	gr. 3 (0·194 gm.)
Extract of liquorice, ...	gr. $1\frac{1}{2}$ (0·097 gm.)

It is intended to combine the action of apomorphine with the stimulant-expectorant properties of ammonium chloride and the demulcent qualities of extract of liquorice. The tabloids are issued in bottles of 25 and 100.

"Tabloid" Ammonium Chloride and Liquorice (London: Burroughs Wellcome & Co.).—This "tabloid" product contains 3 grains of ammonium chloride and 2 grains of extract of liquorice, and presents a very convenient means of administering the combination. It is issued in bottles of 100.

Chivers' Jellies, &c. (Chivers & Sons, Limited, Histon, Cambridge).—We have received samples of various preparations by this well known firm, whose enterprise, starting in 1873 with a disused stable as a boiling-room, and a barn as a warehouse, has evolved a great industry in East Anglia. The firm not only grow fruit for themselves, but buy largely in the neighbourhood, and since they commenced operations, thousands of acres in the district have been put under fruit cultivation. The jellies, jams, marmalade, custards, blancmange, cake powder and baking powder, and the Cambridge lemonade, need simply be mentioned here as leading products of the great Histon factory.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

Session 1901-1902.

Meeting VI.—20th December, 1901.

The President, Dr. W. G. Dun, *in the Chair.*

I.—A SIMPLE GAUGE FOR MEASUREMENT OF SPINAL AND OTHER VARIATIONS IN SYMMETRY, WITH SPECIAL REFERENCE TO ITS APPLICATION IN CASES OF LATERAL CURVATURE.

By Dr. Arch. Young.

The gauge, a very simple one, was shown and fully described. Without entering into details, it may here be stated that it consists essentially of two arms, of thin, flexible, but resilient steel, placed accurately at right angles to each other, and sliding freely through grooves in a thin, skeleton, central frame of brass. Both arms, horizontal and vertical, are graduated from zero, placed at the middle of their length, and are interchangeable without altering the relation of the central frame, whose lower margin is also graduated.

The instrument is planned upon the lines of the "Skoliosometer" of von Mikulicz, as described by him in the *Centralblatt für Chirurgie*, May, 1883, but it is devoid of the special recording dial at the lower end of the vertical limb, designed for registering, in + or – numbers, the excursion to right or left of the normal vertical of the main and compensatory spinal curves.

The reasons for discarding this part of the apparatus were fully given; the chief one being that, in order to obtain a constant or regular relation between periodical records, some more rational and scientific method of fixing a true or fundamental vertical must first be determined, and von Mikulicz's instrument only provided for an arbitrary superimposing of the sacral plate on the sacrum, and, *as nearly as possible*, in axial correspondence with it.

Points to be attended to in using the gauge were detailed, and the advantages likely to result, not only in a more scientific investigation of the condition of affairs in any given case, but also as regards the ætiological significance of the various features, and especially from the point of view of logically determined and rationally applied treatment.

It was shown that the making and preserving, for reference, from time to time, of systematic records obtained by use of this instrument were likely to lead to improved knowledge of such cases, and to a more hopeful view in treatment.

The records were shown to be made very easily and rapidly, preferably on special sectional paper, by a very simple process of drawing to scale.

Other uses of the gauge, such as in craniometric measurements, chest measurements, as in insurance work and in examination of recruits, diagnosis of fractures and dislocations, investigation of the relative development of opposite sides, in chest deformities, tumours, &c., were touched upon.

II.—CASE OF ENLARGED CIRRHOTIC LIVER WITH ENLARGEMENT OF SPLEEN AND ALBUMINURIA, PROBABLY DUE TO INHERITED SYPHILIS.

By Dr. T. K. Monro.

Annie B., aged 22, domestic servant, was admitted to the Glasgow Royal Infirmary on 4th October, 1901. For nearly a year she had complained of a feeling of fulness about the waist, and early in 1901 there was swelling of the legs, with reddish patches between the knees and ankles, but without constitutional symptoms. As early, however, as 1895, patient was in the hospital at Bridge of Weir Home with abdominal swelling and vomiting. Three months before admission, she had to take to bed owing to increasing swelling of the abdomen. After treatment with iodide of potassium, she became able to go about for a week or two, but she again became worse. There was diarrhœa for about a month before admission. On admission there was slight œdema of the feet, but this soon passed away. There was considerable enlargement of both liver and spleen, the former extending down as far as the level of the iliac crest in the nipple line, and at its lowest part (a little external to the nipple line), quite as low as the umbilicus. The organ was rather firmer than normally, and had a rounded edge, the anterior surface and lower border being both rough with small nodules. The upper border of hepatic dulness was at the fourth space in the right nipple line. The spleen projected about 2 inches below the costal margin in the left nipple line, and was slightly tender on pressure. The liver was not tender, and there was no ascites or jaundice. The heart was normal, but the pulse was soft and extremely small. Impairment of percussion was noted at both posterior bases, but the lungs otherwise were normal.

Ophthalmoscopic Examination.—Myopia in both eyes, with posterior staphyloma; the fundi otherwise normal, and the corneæ also normal.

Blood Examination.—Hæmoglobin, 75 per cent; red blood corpuscles, 5,683,000; white blood corpuscles, 6,250.

There is reason to believe that the patient is the subject of inherited syphilis. Her mother before marriage had been a woman of loose life. Patient was admitted to the Orphan Homes of Scotland in 1882. In 1892 she was attending the Ear Hospital with deafness, and in 1894 she attended the Eye Infirmary on account of her eyes. According to a report by Dr. J. Kerr Love, the membranes of both ears are intact, and there is not much retraction. There is no hearing for whispered speech or ordinary conversation (the latter, however, has been found to vary much). The tuning-fork test shows that bone conduction is considerably diminished. Dr. Love agrees that the affection is probably syphilitic. Some of the teeth are lost, but those that remain, including some of the incisors, show no deformity suggestive of syphilis. There is no deformity of the nose or scarring about the lips. There is no sign of disease of the joints.

Since admission there has been no great change in the general or local conditions, though patient has improved in some ways. There has occasionally been vomiting and diarrhœa, but of late constipation has been the rule. The temperature has been almost constantly subnormal. The urine seems nearly normal in quantity, but it always contains abundant albumen, and the sediment usually contains a few casts, chiefly hyaline and granular. The leucocytes are rather diminished than otherwise, and differential counts show that this applies especially to the neutrophiles, which amount to from 51 per cent to 56 per cent, while the lymphocytes (mostly small) amount to from 45 per cent to 48 per cent, and the eosinophiles to 3 per cent. The treatment has included arsenic, grey powder with tartrate of iron, syrup of the iodide of iron, and iodide of potassium.

It is probable that the enlargement of the liver is due to congenital syphilis. The albuminuria and the splenic enlargement are strongly suggestive of amyloid disease, though it has been asserted that this degeneration is almost unknown in connection with inherited syphilis.

Dr. M'Call Anderson said there is little doubt that it is based on congenital syphilis, but it is difficult to say whether it is one of amyloid disease or diffuse syphilitic hepatitis.

Dr. Robertson said the case was interstitial hepatitis; the liver was too irregular to be amyloid disease.

Dr. Monro replied.

III.—CHRONIC ENLARGEMENT OF LIVER AND SPLEEN WITH GLYCOSURIA—AT FIRST INTERMITTENT, LATTERLY MORE PERMANENT.

By Dr. J. Lindsay Steven.

Myles H., æt. 10, was admitted to the Glasgow Royal Infirmary on 22nd November, 1901.

The illness dates from 1899 at least, when Dr. John W. Findlay treated him for acute pneumonia of left apex, and observed marked enlargement of liver and spleen. Dr. Findlay also reports that spirits were freely given to the child since his infancy for the relief of bronchial catarrh.

Has been fairly well since last residence (June, 1900) till ten days ago, when advancing emaciation and weakness forced him to seek admission. Night sweats have been prominent during past six months. Persistent glycosuria, varying considerably; persistent tachycardia; girth at umbilicus, 26¾ inches; no ascites; no albuminuria; no thirst; no polyuria; right lobe of liver comes down to umbilicus level; lower edge of spleen nearly to umbilicus; generally apyretic.

IV.—CASE OF ENTERIC FEVER WITH GENERAL INFECTION BY STAPHYLOCOCCUS PYOGENES AUREUS.

By Dr. T. K. Monro and Dr. J. Archd. Campbell.

John S., aged 21, sailor, was admitted to the Glasgow Royal Infirmary on 19th September, 1901. With the exception of measles in childhood, he had enjoyed good health till the present illness began on 5th September, 1901. The first symptoms were abdominal pain and diarrhœa, the bowels moving from six to nine times daily. While he was at sea, namely, till 18th September, he was only allowed to remain in bed for half a day. After he came ashore, he began to suffer from cough and spit. The symptoms included slight abdominal distension with tenderness in the right iliac and lumbar regions; enlargement of spleen; furred tongue; severe diarrhœa with pea-soup stools; successive crops of rose spots; dilated pupils, and insomnia. The diazobenzol reaction was given by the urine.

On 20th September the stools numbered as many as eighteen.

In the course of a few days the pulse became very rapid and hyperdicrotic. The tongue was dry and cracked. There was retention of urine. The temperature varied between 100° and 103·8°, with well marked daily remissions. The respirations were accelerated, but repeated examination of the chest revealed no dulness or râles. Patient died rather suddenly of exhaustion on 24th September.

The *post-mortem* examination, which was performed by Dr. Hugh M'Laren, showed the usual lesions in the small intestine, and also a few in the large intestine. Many of them were at the stage of necrosis with bile staining, but scarcely any sloughs had yet separated. There were no miliary tubercles under the serous coat. The spleen and mesenteric glands were enlarged; the spleen firm, and the glands soft. Both lungs were congested and œdematous. In the upper lobe of the left lung, there were several small wedge-shaped areas, of a darker red colour at the periphery than at the centre; these pieces sank in water.

Bacteriological Report by Dr. J. Archd. Campbell.—The bacteriological aspect of the case, of which Dr. Monro has given the history and clinical report, presents some interesting and unusual features.

On 21st September a specimen of blood was sent down to the Bacteriological Department to be submitted to the Widal typhoid test. A dilution of 1 in 30, with a time limit of two hours and a half, was adopted. The dilution to be absolutely accurate was made with a Thoma-Zeiss pipette, and sterile bouillon was added to 3·5 c.cm. blood to make the bulk up to 100 c.cm. This was centrifugalised to get rid of the corpuscular elements. The inoculation was made from a twenty-four hours' old culture of bacillus typhosus on glycerin agar. During the whole period of observation there was not the slightest tendency to agglutination, nor any loss of motility. The result was most emphatically negative, and was so reported.

A larger quantity of blood was sent than was necessary for the purposes of the test. One capillary tubeful was blown into a bouillon-tube and yielded a marked growth of staphylococcus in pure culture after twenty-four hours' incubation at 39° C. No further observation was made in this matter at that time.

On 25th September a *post-mortem* examination was made. Cultures were made from the organs as below—

1. From the spleen.
2. From a mesenteric gland.
3. From an infarction in the lung.

Bouillon and agar cultures were in each case made with the following results. From the infarct a pure culture of staphylococcus pyogenes aureus was obtained. In the cultures from the spleen and mesenteric gland we had a mixture of a bacillus with the golden staphylococcus. Plate preparations were now made with the object of separating the organisms for more careful study. After exhaustive tests, the bacillus present was found to be bacillus coli communis. It reacted in every degree to the differential tests applied. Its growth on gelatin and potato gelatin (Elsner's medium) was characteristic. It coagulated milk. It formed gas in gelatin shake and glucose bouillon cultures. It gave a profuse growth in twenty-four hours on agar-agar, and a wide surface growth in five or six days on gelatin stick cultures. Cultures on potato were not made. It now occurred to me to go a little further with the culture I had made from the blood on 21st September, as I now found that instead of Welch's staphylococcus epidermidis albus—which so commonly contaminates cultures made from blood, unless the most careful precautions are taken to sterilise the skin—I was again dealing with the golden staphylococcus. Now, this case is interesting in the fact that from the circulation in life, and from the organs *post-mortem*, was obtained the staphylococcus aureus. Pathologically, the case was one of typhoid ulceration of the intestine, but without the presence, at least *post-mortem*, of Eberth's bacillus The question naturally arises, was this case primarily an infection with bacillus typhosus, and secondarily one by staphylococcus? If it had been the former, we would naturally expect to have had at least a positive Widal reaction, and if it was a pyæmia simulating typhoid clinically and pathologically, it is unusual.

In Dr. M'Crorie's records in the Bacteriological Department of the Royal Infirmary, there are cases noted that were clinically typhoid, though *post-mortem* it was found that, short of ulceration, there was deep congestion and prominence of Peyer's patches, and that the only germ present in these that could account for the condition was the pneumococcus of Talamon-Fränkel.

While, no doubt, there was room for a divergence of opinion in the two directions suggested in Dr. Campbell's report, Dr. Monro was inclined to think that the symptoms and morbid anatomy could be relied upon as pointing to enteric fever with a secondary staphylococcus infection. It is a familiar experience in connection with enteric to have a negative Widal test;

and it is quite possible that after death the other organisms overwhelm the bacillus typhosus and cause it to disappear.

V.—FATAL CASE OF ACUTE INFANTILE BRONCHO-PNEUMONITIS, IN WHICH THERE WAS A VERY MARKED LEUCOCYTOSIS.

By Dr. J. Lindsay Steven.

Under the microscope are placed blood films by Dr. Scott, showing a most intense leucocytosis, the white blood corpuscles numbering over 200,000 per c.mm. The blood counts were verified by independent examinations made by Dr. Ramsey. The leucocytes also presented more of an oxyphile reaction than is usually observed in the method of staining employed. The leucocytosis is of interest in view of the fatal issue of the case. The following is a brief abstract of the clinical history:—

Catherine M'L., aged 1 year and 10 months, was admitted to Ward 8 on 12th December, 1901, and died the next day. The child had suffered from measles about two months before admission, and since this illness she had never regained strength. About a fortnight before entering the ward she began to cough and get very drowsy, and on 6th December she was obviously very ill. On the evening of that day the cough was very severe and hard, and the breathing was very rapid. She refused food, but was very thirsty. Her skin was very hot, and remained so until the 10th inst., but since that date the mother thought she had not been quite so feverish. Dr. Galbraith Faulds saw her on the 8th, and diagnosed pneumonia; on the 12th he saw her again, and sent her to the infirmary. The father and mother are healthy; of five children three survive; one died of inflammation of the lungs after a week's illness, and the other of convulsions following measles. The condition of the child on entering the ward was very critical. Dr. Scott's note informs us that the face was greatly cyanosed; the respirations were very rapid, numbering 103 per minute; and the cough occurred in frequent severe paroxysms, followed by some white frothy spit that had to be wiped from the mouth after the seizure; the temperature was 100·4°; and the pulse was so rapid that it could not be accurately counted. No dulness was anywhere detected over the chest; but everywhere fine crepitant râles could be heard, chiefly with inspiration; the râles were more abundant and of coarser quality at the left apex in front and at the right base behind. The heart's action was very feeble, and no precise note of its condition was possible. The abdomen was not much distended, and the spleen was not palpable. The hepatic area was not increased. On the morning of the 13th I saw the child, and if I read to you the following note which I then dictated, it will indicate to you sufficiently the further course of the case:—"The child this morning is critically ill, and lies in bed without noticing much, and without much resistance to being handled. The breathing is exceedingly rapid, and the expiration laboured and panting. There is very vigorous action of the alæ nasi. The complexion is very pale, but after a fit of coughing there is considerable lividity. The temperature has been gradually rising from 102·4° F. at 8 P.M. last night to 103·4° F. at 8 A.M. this morning. No dulness can be detected at any part of the snrface of the chest; but at the right base behind and at the right apex in front numerous fine liquid râles, chiefly on respiration, are detected. All the phenomena indicate a severe acute capillary bronchitis or broncho-pneumonitis." Such was my note of the condition on the morning of the 13th. The child died on the evening of the same day at 11·15. At 8 P.M. the temperature was 105° F., at 11 P.M. 106° F. Two convulsions took place at 5 P.M. and 8 P.M., in which the left side of the body was most involved. During the two days' residence the bowels were loose, having moved seven times.

Two examinations of the blood were made—one on the 12th, the other on the 13th, both at 11 A.M.—of which the following is Dr. Scott's report:—

"The fresh specimen shows little tendency to rouleaux formation; there is very great leucocytosis.

"*12th December, 1901.*

Hæmoglobin,	90 per cent.
Red blood corpyscles,	4,800,000
White blood corpuscles,	236,000

"*13th December, 1901.*

Hæmoglobin,	60 per cent.
White blood corpuscles,	227,810

"*Differential Count.*

Polymorphonuclear leucocytes,	33·6 per cent.
Lymphocytes,	50·2 ,,
Large mononuclear,	15·2 ,,
Eosinophiles,	·57 ,, "

There was no *post-mortem.*

Dr. A. R. Ferguson expressed some surprise at the extraordinarily high leucocytosis (236,000 per cubic millimetre) recorded in this case. The highest degree of leucocytosis recorded by Türck, Halla, and other investigators did not exceed, and seldom reached, 40,000 per c.mm. He had no doubt that the condition of the lymph-glands and spleen had been carefully investigated by Dr. Steven, and that, therefore, no explanation could be given of the high leucocytosis from this point of view.

Dr. Ferguson stated that, from his own observations in pneumonia, occurring especially in the course of variola, but also in other infectious diseases, the leucocytosis, although such as to produce a distinct increase over the figure representing that due to the disease itself, and which was present from an early stage, was not in the least comparable with that recorded in this case. He further referred to the nature of of the leucocytosis in Dr. Steven's case. This had been stated as a lymphocytosis, whereas in all recorded cases of pneumonia, the increase in the polymorphonuclear neutrophiles was the characteristic feature.

Dr. Ferguson further referred to certain anomalous features in the staining reactions of the polymorphonuclear neutrophiles, and of the more or less abrupt fall in the total numbers of leucocytes, as well as of the neutrophiles, in cases proceeding to a fatal termination.

MEETING VII.—6TH JANUARY, 1902.

The President, DR. W. G. DUN, *in the Chair.*

On the invitation of PROFESSOR CLELAND, this meeting was held in the Anatomical Class Room of the University, to give the members the opportunity of inspecting the new museum and other recent additions to the anatomical department.

DEMONSTRATION BY MEANS OF THE MICROSCOPE PROJECTION-LANTERN.

BY DR. J. F. GEMMILL.

Dr. Gemmill gave a demonstration by means of the microscope projection-lantern, of a series of sections of double-monster trout embryos, and called attention to the illustrations given by his specimens of the laws regulating structure in symmetrical duplicity. Singling out one organ — the pronephros—for fuller notice, he gave a short account of its structure in the normal condition, and then showed a number of reconstructions of the same organ from different double-monster embryos. These reconstructions formed a series, at one end of which the duplicity was almost entirely masked, being revealed only by the presence in the glomerulus of two vascular tufts, while at the other end of the series the duplicity was evident and complete.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1901-1902.

MEETING V.—10TH FEBRUARY, 1902.

The President, MR. H. E. CLARK, *in the Chair.*

I.—SERIES OF SPECIMENS ILLUSTRATING SOME POINTS IN THE PATHOLOGY OF APPENDICITIS.

BY DR. GEO. T. BEATSON.

The specimens were thirty in number, and were removed by operation, the result in all of the cases being successful. They were part of a series of forty-eight cases which were treated in the acute stage by local measures, operation not being resorted to until the acute symptoms had subsided. Of these forty-eight cases only one died, and he was admitted to hospital in a moribund condition, owing to general suppurative peritonitis following on a gangrenous condition of the appendix. Patient's state on admission contra-indicated operative measures.

In his remarks on these cases, Dr. Beatson dwelt on them from a clinical and operative point of view. He expressed the opinion that these forty-eight cases, drawn from a wide field, pointed to the fact that the gravity that has of late been assigned to all appendicular inflammations is not altogether justified by facts, and that there is not that need for immediate surgical interference in all cases of appendicitis that has become the teaching amongst a certain number of surgeons.

After dwelling on some anatomical and physiological facts connected with the appendix—such as its position, development, peritoneal covering, mesentery, natural tendency to obliteration, and its structure—emphasis was laid on the importance of recognising that appendicitis includes peritonitis, and that the two were inseparable; but that fortunately the latter was in the large majority of cases of a localised or limited nature, thus furnishing a more favourable prognosis, and justifying the employment of medicinal, dietetic, and other measures. Of the exciting causes of appendicitis, the record of these forty-eight cases showed that the acute gangrenous form is comparatively rare, and that bends, strictures, and adhesions are the most frequent ones. Considerable stress was laid on the view that the localised peritonitis accompanying appendicitis has not the immediate dangers so generally assigned to it. It does not lead to the formation of collections of pus that may rupture into the general peritoneal cavity and set up general peritonitis. Pus formation is the exception, and certainly there are never any large intra-peritoneal accumulations of matter. When pus is formed in any quantity, it is always retro-cæcal, and such retro-cæcal abscesses seldom burst into the peritoneal cavity. During the operations, there was from time to time met with a yellowish *débris*, lying amidst matted intestines and around the perforated appendix, the remains of what had been limited collections of turbid purulent serum, but it was not in any quantity, and was drying up. All the large collections of purulent matter met with amongst these forty-eight cases were retro-cæcal and extra-peritoneal.

Another point brought out by the conditions met with during operations was, that there are cases of typhlitis and perityphlitis that arise *per se*, and have nothing to do with the appendix.

The conclusions come to by Dr. Beatson as regards treatment were—

1. That the cases of diffuse peritonitis connected with virulent microbial inflammation and perforation of the appendix form a minority of the cases met with, but that in these cases early laparotomy should be done, just as in the perforative peritonitis due to ruptured gastric ulcer.

2. That the large majority of cases of appendicitis are accompanied by a localised plastic peritonitis, and consequently do not call for early operative measures, but should be dealt with by rest, avoidance of all saline and other purgatives, local warmth, and careful dietetic measures.

3. That in these latter cases, where pus is suspected it should be waited for; but when attacked, it should be sought for from behind and not from the front, as it is usually retro-cæcal.

4. That cases of recurrent appendicitis should be operated on in the interval between the attacks.

5. That the incision for the removal of the appendix should be at the outer border of the rectus muscle, and that none of the lateral muscles of the abdominal wall should be cut through.

6. That in retro-cæcal abscesses containing concretions, no attempt should be made to search for the appendix, as it may have sloughed away. If it is thought advisable to deal with it, it should be done after the abscess has healed, and would probably be best carried out from the front.

7. That the handling of all cases suffering from inflammation in the right iliac region should be conducted with the greatest care, so as to avoid disturbance of the part and rupture of any collections of matter.

8. That the possibility of mistaking the distended cæcum filled with fluid fæces, and very tender from peritonitis, should be borne in mind.

9. That a more rational view should be taken of appendicitis, and that there should be a restoration of confidence in the old expectant plan of medicinal measures, as they are really applicable to a large percentage of the cases.

Mr. Maylard said he felt some hesitation about speaking, Dr. Beatson had touched upon so many branches of the subject, and had opened such a wide field for discussion. He would confine his remarks to one or two points. He had considerable experience of operating in cases of appendicitis, his first operation having been performed in 1891, and his conclusions were not quite the same as those of Dr. Beatson. There were many varieties of appendicitis, which we might in the future be able to differentiate accurately. In the meantime, he was inclined to refer them all to a common cause. The degrees of virulence of the inflammation varied from a slight catarrh up to acute gangrenous conditions. In many cases, concretions were present. Why should one case develop into a most severe disease, while another remains a slight catarrh? He attributed the variations to differences in the virulence and the numbers of the micro-organisms present. As to the position of the appendix, he thought that it varied far more than Dr. Beatson had stated. The American surgeons, at least, were of this opinion. While disagreeing with many of the conclusions expressed in the paper, he congratulated Dr. Beatson on the manner in which he had brought his cases before the Society, and regretted that the whole evening had not been set aside for a discussion of the subject.

Professor Muir could not entirely agree with Dr. Beatson about the pathology of appendicitis. Perhaps the cases which he saw were different; because, fortunately, the mild cases did not come under his observation. Dr. Beatson had drawn too sharp a line between localised plastic inflammation and diffuse suppurative inflammation of the peritoneum. There was a tendency to regard it as all over when once the peritoneum was invaded. On the contrary, there were ample grounds for believing that there were all degrees of severity in bacterial infection of the peritoneum. We knew from experiment that injection of a moderate dose of staphylococcus pyogenes aureus into the peritoneum of a rabbit evoked a great emigration of phagocytes, which would destroy the microbes even without fibrinous exudation occurring. A larger dose would lead to fatal general peritonitis. The same thing he believed could occur in the human peritoneum; the microbes which had invaded it might be disposed of without serious results occurring. One not infrequently found collections of pus around the appendix within the peritoneum and localised by fibrinous adhesions. In the bulk of cases the pus became localised. When such collections were large, they would be better treated from behind. It must also be borne in mind that microbes could pass through unruptured membranes, and that accordingly infection of the peritoneum might occur apart from perforation of the appendix. Most frequently the organisms concerned were bacillus coli communis and the pyogenic micrococci; sometimes they occurred in pure cultures; more frequently, however, a mixture of organisms was found, especially in the cases associated with gangrene. He would like to know how many of Dr. Beatson's cases contained concretions.

Dr. Beatson replied that concretions were found in four of his cases.

His (Professor Muir's) experience was that they were found in the great majority of cases that came to the *post-mortem* room. He also found concretions in a certain number of subjects who presented no signs of appendicitis.

Dr. Workman agreed with Mr. Maylard as to the extreme variability in the position of the appendix, a variability so great that it was hardly possible to classify its positions—it might be found almost anywhere in the abdomen. He had found it stretched up behind the cæcum, almost to the under side of the liver. In another case it was drawn well over to the left iliac fossa. He considered that micro-organisms entered into the causation of nearly all cases of appendicitis. He had never observed a foreign body in the appendix, but he generally found concretions, and many of these mimicked foreign bodies, such as orange pips.

Dr. Rutherfurd could not accept Dr. Beatson's classification of the causes of appendicitis. He very often found concretions in cases of appendicitis; on the other hand, he had often observed concretions where clinically there was no appendicitis. Torsions, strictures, and adhesions were the occasion of irritation which gave the opportunity for invasion by microbes. It was difficult to differentiate between mild and severe cases; any case might become rapidly dangerous, even those in which there had been repeated attacks. Only in the case of the appendix being obliterated by inflammation did it cease to be a source of danger; this was not necessarily the result. The presence or absence of pus was not a criterion of the gravity of a case. Cases sometimes ran a rapidly fatal course without the formation of pus.

Dr. A. A. Young had more often seen pus intra-peritoneally than in the retro-cæcal position.

Mr. Clark did not agree to the retro-cæcal position of the appendix being the commonest. Against Dr. Beatson's authorities he quoted Struthers, to the effect that it lay generally pointing upwards and to the left towards the spleen. But it was possible that most of those that were diseased lay retro-cæcally. He had, however, seen abscesses which lay quite to the left of the middle line. Most large abscesses certainly were retro-cæcal or retro-colic, and were extra-peritoneal. The relation of the appendix to the liver mentioned by Dr. Beatson and Dr. Workman was interesting, both because it was a result of the course of development of the intestines, and also because of the occurrence of abscesses just below the liver, which it was very difficult to diagnose, and which were sometimes of this nature. He held that Dr. Beatson had not sufficiently dealt with cases in which a small abscess was present, and in which the appendix could not be removed. He agreed with him that there were cases of true typhlitis and perityphlitis, in which the cæcum and not the appendix was the prime seat of disease; and he also agreed with him that it was well to enter a protest against operative interference in all cases of appendicitis.

Dr. Beatson, in reply, stated that he quite agreed that microbes were the general cause of peritonitis. But the cases in which they were of a virulent kind, such as could cause acute general peritonitis demanding immediate operative interference, if the patient were to be saved, were very rare. Frequently, although microbes may be present, abscess will not result; and, even if it does, it will rarely—he would almost say never—rupture into the peritoneum. Most intra-peritoneal abscesses remained small and limited by adhesions; the large abscesses were retro-peritoneal, and should be attacked in such a way that the peritoneum was never opened.

II.—CLINICAL NOTES OF A CASE OF CHONDRO-SARCOMA OF THE UTERUS.

By Dr. W. L. Reid.

Mrs. M. N., æt. 59, was admitted to Ward XVI of the Western Infirmary on 13th January, 1902, suffering from bleeding from the vagina of two months' duration. Menstruation was normal from the age of 16 till the menopause at 47, that is, twelve years ago.

Patient had six normal pregnancies and labours, the last twenty-one years ago. She miscarried of twins at the fourth month, twenty-six years ago.

She was in good health, and had no vaginal discharge until four months ago, when a copious, ill-smelling discharge appeared, unaccompanied by pain. Two months ago it became sanguineous, and now the bleeding is profuse, and the odour bad. There are no bowel or bladder symptoms, and, except for weakness, patient makes no complaint.

15th January.—On examination to-day the cervix uteri is found split into the vaginal roof on the left side, and drawn into a pocket of mucous membrane on that side. There is a good deal of sanguineous discharge, not now malodorous. The fundus is enlarged to the extent of a fourth month pregnancy; the cervix is neither patulous nor eroded. No palpable deposit exists in the broad ligaments or pelvic glands. Owing to the bleeding, the sound is not used.

17th January.—To-day a piece of tissue like part of a lemon-rind was passed spontaneously from the vagina, accompanied by pain and considerable hæmorrhage. This was sent to the pathologist.

22nd January.—To-day vaginal hysterectomy was performed, the only difficulty being that caused by the shortening and thickening of the broad ligament on the left side, and the fact that when the fundus came into the pelvic cavity it blocked it so completely that the tubes were reached and tied only with great pains. The abdomen had been prepared, so that, if necessary, the operation could have been finished by abdominal section.

8th February.—The patient has made a good recovery, and is now moving about the ward. There is still a little mucopurulent discharge, but no granulating tissue can be felt with the finger or seen through the speculum, and there is no odour. The temperature rose slightly on 25th and 26th January, and on the latter date the iodoform drain, inserted at the operation, was removed, as the discharge had become slightly fœtid.

There is no evidence of any other organ or tissue in the body being in any way morbidly affected.

Dr. James Walker demonstrated the tumour and microscopical preparations from it.

The slough passed *per vaginam* was first examined. It measured 2½ inches in length, an inch and a half across, and half an inch to three quarters of an inch in depth. Its colour was a pinkish-white, in which were many brownish-red areas of interstitial hæmorrhage. Of these the largest was about three quarters of an inch square, and was probably produced by the expulsive efforts of the uterus. It would then correspond with the lower end of the specimen. The slough is subdivided into lobules of different sizes, the largest being the seat of the hæmorrhage just mentioned. The major part of the slough has a smooth surface, but there is present at a place a rough ulcerated area corresponding to an ulcer in the canal of the cervix. By this part the sloughed tumour had been attached to the uterus. The general consistency was of moderate firmness, but there were harder parts throughout the specimen, and these on incision presented the naked-eye appearances of hyaline cartilage.

The uterus, which was removed by vaginal hysterectomy, proved to be somewhat enlarged (3½ inches from os externum to fundus). The cavity of its body was filled by a tumour 2½ inches in vertical measurement. This corresponded in colour, lobulation, and consistency with the slough just described.

The cervical canal showed on its right and posterior part the large deep ulcer mentioned above.

Microscopical examination.—Portions of tissue were fixed in 1 to 20 carbolic acid solution. Of these some were frozen and cut, while others were cut after embedding in paraffin. Some sections were stained in hæmalum, eosin, and orange, in the usual way. Other sections were stained for three minutes in carbol-thionin-blue and differentiated in methylated spirits.

The stroma was very cellular—spindle, round, and branched cells being present. The blood-vessels showed very thin walls. The intercellular tissue varied greatly in amount. In it were many myxomatous tracts, and here and there, generally near the free surface of the tumour, were seen islets of hyaline cartilage, the spaces of which held one, two, or three cartilage cells. The surface of the tumour was covered by endometrium, of which the glands were widened and distended. These facts show the tumour to be a myxo-chondro-sarcoma.

Summary of references to myxo-chondro-sarcoma uteri (by kindness of Professor Muir).—The condition is referred to in certain systematic text-books and monographs. These facts emerge—

That the condition, while recognised, is of rare occurrence.

That the majority of such tumours arise from the vaginal portion of the cervix uteri.

That the co-existence with the cartilage of myxomatous tissue is almost invariable.

That the tumours possess a high degree of local malignancy, and sometimes show general malignancy.

No explanation is offered of the presence of the cartilage.

Theory of the presence of cartilage in the tumour.—The cartilage is probably a degeneration of the intracellular matrix as the result of imperfect nutrition.

For cartilage-containing tumours of this type are attached to the uterus by a surface bearing a small proportion to their mass, and indeed show, very generally, the appearances of myxomatous degeneration. This occurrence together of cartilage and myxomatous degeneration is very significant, in light of the fact demonstrated by Morochowetz that chondrin is, roughly speaking, a mixture of mucin with gelatin and collagen. It is only necessary to assume an addition of gelatin, or some allied substance, to the mucin already present in the intracellular tissue to reach a probable explanation of the formation of the chondrin elements of the cartilage matter. The occurrence of gelatin in such a part, instead of more highly complex proteid matter, may not unnaturally be regarded as a change explicable on the assumption of impaired nutrition.

Dr. Workman threw some doubt on the presence of true cartilage in the specimens demonstrated. There was a "shading off," as it were, at the margins of the cartilaginous area into the connective tissue stroma—an appearance which he was not accustomed to observe in tumours containing cartilage. He would have preferred to examine a hæmatoxylin-stained specimen.

Professor Muir spoke in confirmation of Dr. Walker's views as to the structure of the tumour. He could not agree with Dr. Workman that the cartilaginous islets in such tumours were usually sharply differentiated from the surrounding stroma.

Dr. Rutherfurd also questioned the cartilaginous nature of the tissue.

Dr. J. Lindsay Steven agreed with Dr. Walker.

On the motion of the *President,* it was remitted to a committee, consisting of Professor Muir (convener), Dr. Workman, and Dr. J. Lindsay Steven, to investigate the tumour, and decide as to the presence of true cartilage.

III.—ON OBSTRUCTION OF THE CORONARY ARTERIES.

By Dr. John M. Cowan.

Dr. Cowan's paper will be found as an original article in our issue for April, 1902, at p. 260.

Meeting VI.—10th March, 1902.

The President, Mr. H. E. Clark, *in the Chair.*

The Secretary intimated that the committee appointed to investigate the myxo-chondro-sarcoma of the uterus shown by Dr. W. L. Reid and Dr. James Walker at last meeting had done so, and were agreed that true cartilage existed in the tumour. Its origin they preferred to leave an open question.

I.—MICROSCOPICAL SECTIONS FROM TWO CASES OF MALIGNANT TUMOUR OF THE PANCREAS AND FROM A CASE OF GENERAL MALIGNANT INFILTRATION OF THE PERITONEUM.

By Dr. Chas. Workman.

Case I.—The patient was a woman of a little over 50 years. The body was well developed and fairly well nourished.

The heart, except for some hypertrophy of left ventricle, was healthy; the lungs somewhat emphysematous; and there were signs of old pleurisy, with considerable fluid in each side. The glands in the posterior and anterior mediastinum were enlarged from extension of the tumour.

In the abdomen a large tumour mass was found, occupying the position of the pancreas and neighbouring lymphatic glands, the left adrenal, the hilum and capsule of the left kidney, the hilum of the spleen and the neck of the gall-bladder.

The liver, stomach, and transverse colon were closely adherent from secondary inflammation. The lymphatic glands throughout the mesentery were greatly enlarged and infiltrated with tumour tissue.

The mucous membrane of the œsophagus, stomach, and small and large intestine was examined throughout, and found quite free from tumour formation.

The left ovary was considerably enlarged and infiltrated with tumour tissue. The uterus showed several small myomas. The liver showed marked passive hyperæmia, and in it were several very large tumour nodules and numerous small ones. The wall of the gall-bladder was studded with small nodules. The spleen was congested, and showed several small nodules of tumour. The left kidney had much tumour tissue around the pelvis. The right kidney showed only one very small nodule. The left adrenal could not be found; it appeared to be embedded in the primary mass. The right adrenal was normal in size, and contained several tumour nodules.

Case II.—The patient was a man, 43 years of age. The body was well developed, but a good deal emaciated. There was great œdema of the left lower extremity, due to thrombosis of the left femoral vessels.

The pericardium and heart were healthy, the lungs very adherent from old pleurisy, and studded with minute secondary tumour nodules resembling miliary tubercles.

The stomach was small and bound down to a large tumour mass behind it. The stomach and the intestines showed healthy mucous membrane throughout.

The head of the pancreas was healthy, but the body of the organ was transformed into a white mass, having the consistence of a scirrhus; the tail was similar, but also infiltrated with blood. The lymphatic glands around the pancreas were also involved, the whole forming a large tumour mass, which surrounded the great vessels. The lymphatic glands of the mesentery were involved, and the peritoneum was studded with very minute secondary nodules.

The glands in the posterior mediastinum and at the root of the lungs were also cancerous. A secondary nodule was found in the glands of the right side of the neck at the angle of the jaw. The liver showed numerous secondary nodules of very various sizes, and there was general passive hyperæmia, with increased vascularity around the tumour nodules.

The gall-bladder and the cystic and common bile-duct were free from tumour and no jaundice was present; the gall-bladder contained fluid bile. The suprarenal bodies and the kidneys were quite free from tumour tissue. The spleen, also, was not involved.

These two cases of malignant tumour, which evidently originated either in or in close connection with the pancreas are interesting, from the widely different character of the tumour tissue in each from the other, and also from the peculiarities of the metastatic extension.

In Case I the tumour is either sarcomatous, or, as I am inclined to think, a myeloid-sarcoma-like cancer. The cells are extremely irregular in size and shape, as well as in the form and arrangement of the nuclei; but in many parts the amount of connective tissue stroma gives to the tumour the character of a carcinoma. The metastasis has evidently occurred by the lymphatics, extending to the mesenteric and mediastinal glands, the liver, gall-bladder, adrenals, kidneys, and ovary, but not to the lungs, and wherever the nodules occurred they gave rise to great inflammatory reaction.

On the other hand, Case II is, from its structure, undoubtedly a glandular cancer, with large columnar cells, for the most part arranged like the acini of a secreting gland. The secondary nodules have extended to the lymphatic glands of the abdomen, the mediastinum, and even to the neck. The lungs are, however, so extensively involved as to make it probable that the disease has been carried to them by the blood-stream, and has spread in them like an acute miliary tuberculosis; in the same way the peritoneum was studded with minute nodules. Yet in this case the bile-ducts were not affected, and there was no jaundice.

CASE III.—*Malignant tumour of the peritoneum.*

The patient was a man, aged 64. The body was well developed and fairly well nourished.

There was great distension of the abdomen, with slightly blood-stained fluid.

The heart was somewhat atrophied, but otherwise healthy; the lungs emphysematous; other organs of thorax healthy.

In the abdomen the omentum was drawn together and adherent to the stomach and colon; it was infiltrated with soft, white tumour masses.

The peritoneum lining the under surface of the diaphragm was also infiltrated with similar tumour tissue, but this did not extend into the substance of the diaphragm.

The mesentery was similarly infiltrated, especially along its attachment to the bowel, and here there was evident secondary congestion.

The liver was slightly enlarged and somewhat fatty. All the other abdominal organs were healthy, except for small tumour nodules in their peritoneal covering.

The lymphatic glands were free from tumour. A considerable mass of the tumour was present in the peritoneal fold between the rectum and bladder. This and the masses between the liver and the diaphragm (shown in the museum specimen) were the largest masses found.

The patient had an illness four years previous to this lethal attack, with swelling of the abdomen, jaundice, purging, and vomiting.

He was admitted to the Royal Infirmary on 20th December. Pain and swelling had commenced two months before that date. Large quantities of fluid were withdrawn at three separate dates in January and February.

He died on 23rd February.

The remarkable feature in this case was the great extension of the tumour in the peritoneum without extension into any of the organs or other membranes or tissues.

Microscopically, the tumour resembles a soft or encephaloid cancer, with very irregularly-shaped cells, and it gave rise to considerable inflammatory irritation, as there are often great numbers of small round cells surrounding the masses of epithelial-like cells.

I am inclined to classify the tumour as an endothelioma of the peritoneum from its microscopical characters and its very peculiar distribution.

II.—SPECIMEN OF A STOMACH CONTAINING A LARGE CHRONIC GASTRIC ULCER WHICH HAD CAUSED AN "HOUR-GLASS" CONTRACTION OF THE VISCUS AND A NARROWING OF THE PYLORUS.

By Mr. A. E. Maylard.

The specimen was removed *post-mortem* from a female patient, aged 30 years, who had for fifteen years suffered from gastric symptoms. A large ulcer occupied the lesser curvature and part of the posterior wall of the stomach. It had produced a contraction of the organ about its centre, but a finger could be easily passed from one part to the other. The distal portion was pouch-like, and its walls considerably thickened. The pylorus was displaced upwards under the right lobe of the liver, to which it was intimately attached by adhesions. It would only admit a No. 8 catheter. The ulcer itself was surrounded by raised indurated edges, and formed a sort of pocket into which a good sized walnut could have been placed. The lining was pale and smooth, and appeared as if quite healed. The deepest part of the floor of the ulcer seemed to be formed by the liver. At one part of the edge, there was a congested and œdematous condition of the mucous membrane, suggestive of some degree of activity. It was from this point that it seemed likely the bleeding had taken place which had been more or less directly the cause of death. Both gastroplasty and gastro-jejunostomy had been performed, but neither saved the patient, who died from the unchecked bleeding three days after the first operation.

III.—SPECIMENS ILLUSTRATING MALFORMATIONS OF THE FŒTUS.

By Dr. J. M. Munro Kerr.

Dr. Kerr showed seven specimens illustrating malformations of the fœtus, as follows:—

1. Anencephalia.
2. Cyclopia.
3. Spina bifida and extreme retroflexion of the body and fissura abdominalis.

4. A fœtus at about the sixth month, showing extreme retroflexion of the head, shortening of the cerebro-spinal axis and lumbar meningocele. The condition resembles that described by Isidore Geoffroy St. Hilaire under the name *Iniencephalie.*

5. Amnionic adhesions associated with protrusion of the brain, fissura thoracis and abdominalis, with protrusion of the heart, liver, stomach, and intestines.

6. Twins, of which the one was an acardiac monster, with four limbs, but no head.

7. Fœtus showing a malformation of the left upper limb (perobrachius). The most interesting feature of the specimen was defective development of the radius, and absence of the thumb, in consequence of which the hand was set at right angles to the fore-arm and the projecting lower end of the ulna simulated the heel. This being felt in a case of breech presentation, in which the two legs were already born, was taken to be a foot, and the case was for a time suspected to be one of locked twins or double monster.

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1901-1902.

MEETING XII.—20TH FEBRUARY, 1902.

The President, DR. JOHN STEWART, *in the Chair.*

I.—NOTES ON THREE CASES OF ABDOMINAL SECTION, WITH SPECIMENS.

BY DR. E. A. GIBSON.

The three cases brought under review were—(1) An interstitial fibroid; (2) large fibroid, with accessory growths; (3) dilated and hypertrophied Fallopian tubes. In course of his notes on these cases, Dr. Gibson emphasised the following points as being worthy of special mention:—All happened in unmarried women; in each the onset was sudden, with symptoms of obstruction and retention of urine; absence in each of hæmorrhage, notwithstanding the large size of uterine cavity.

II.—A NOTE ON THE PREVENTION AND TREATMENT OF CONJUNCTIVITIS OF THE NEW-BORN.

BY DR. ANDREW WILSON.

In introducing the subject, Dr. Wilson briefly reviewed the history of the disease, and referred to the detection of the gonococcus by staining with methylene blue. He detailed, in a thorough manner, the steps to be followed in the way of prophylaxis. When the disease had been acquired, the most important point in the treatment was the thorough cleansing of the eyes every hour—a matter of more importance than the use of any special antiseptic or astringent. If under daily direct medical supervision, he recommended the daily application of 20 per cent solution of protargol; but if the patient was seen at the dispensary, he gave a 10 per cent solution to be dropped into the eyes by the mother three times daily. He held the opinion that protargol had greater penetrating power than nitrate of silver; and, further, did not stain the lids even when used continuously.

Dr. Wilson also indicated the importance of notification of such cases of eye disease, recommending it as a practical measure, of which a modified form obtains in Germany.

Both papers gave rise to an interesting discussion, and at the close Dr. Gibson and Dr. Wilson received the thanks of the Society for their contributions.

MEETING XIII.—6TH MARCH, 1902.

The President, DR. JOHN STEWART, *in the Chair.*

I.—AN EXHIBIT OF PHARMACEUTICAL PRODUCTS AND A GIFT TO THE SOCIETY BY FLETCHER, FLETCHER & CO., LIMITED.

Following upon the reading of the minute of the previous meeting, the President announced the gift to the Society by Messrs. Fletcher, Fletcher & Co., Limited, of a handsomely framed pair of portraits from their Vibrona Art Series, finely reproduced in photogravure from the original paintings. These were unanimously accepted and much admired. An exhibit was also made of pharmaceutical products by Messrs. Fletcher, Fletcher & Co., Limited, including their well known Vibrona and Hydrobromate Syrups and other preparations; and Kolax, a new dietetic laxative for the treatment of habitual constipation. The same firm's improvements in the standardisation of liquors for the production of the pharmaceutical tinctures were also explained.

II.—GENERAL AND MEDICAL EXPERIENCE WITH THE TROOPS IN SOUTH AFRICA.

By Dr. Robert Pollok.

In the course of his address, Dr. Pollok gave a very interesting and instructive description of his work as a surgeon with His Majesty's forces in the present war. Leaving Bloemfontein, where he saw a great deal of enteric fever, he accompanied the 18th Brigade, and was in the midst of the exciting events that befel the march on Pretoria and Komati Poort. A detailed account was given of the component parts of the field hospital and the method of attendance on the wounded. The lecture was copiously illustrated by a fine series of lantern slides, and was greatly appreciated by a large meeting of the Society.

REVIEWS.

Text-Book of Pharmacology and Therapeutics. Edited by W. Hale White, M.D., F.R.C.P. Edinburgh and London: Young J. Pentland. 1901.

Like so many medical treatises which have appeared in recent years, this is a composite work, nearly thirty contributors having co-operated to produce it. Materia medica is not included, and the doses and composition of preparations are also left out as far as practicable. The book, therefore, is suited, not for the ordinary student, but rather for practitioners and teachers. The first article, written by Mr. F. G. Hopkins, is on the very interesting question of the relation between chemical constitution and physiological action. Dr. J. S. Haldane follows with an article on gases, after which the various anæsthetics are discussed by Mr. George Rowell.

Chloroform, ether, and alcohol are next considered, and after them the cardiovascular tonics. After this, it becomes somewhat difficult to recognise the plan on which the sequence of drugs is based, but the editor himself explains this lack of system as due to the desire to keep together the various contributions of individual authors, especially with regard to drugs of minor importance. The index is intended to meet our difficulty in this matter. The article on the nitrites and organic nitrates is from the pen of the late Dr. D. J. Leech, who also wrote the paper on mineral waters. The astringent group of metals is treated of by Dr. Thomas Oliver, and, as might be expected, the subject of toxicology is fully borne in mind. Mercury and iodoform are described by Professor Shoemaker, the volatile oils by Dr. R. B. Wild, and cinchona by Professor C. R. Marshall. Dr. Hector Mackenzie writes on organotherapy, Dr. Washbourn on serum therapy, Dr. Sidney Martin on diet, the Editor on baths, massage, and venesection, and Dr. J. H. Bryant on the uses of electricity in medicine. The volume deserves a hearty welcome from all who are interested in therapeutics. It contains an immense amount of valuable matter, and may be taken up at any time, opened at any place, and read with pleasure.

Nothnagel's Encyclopedia of Practical Medicine (Saunders' English Edition). Vol. I: Typhoid and Typhus Fever. By H. CURSCHMANN. Edited, with additions, by WILLIAM OSLER, M.D. Authorised Translation from the German, under the Editorial Supervision of ALFRED STENGEL, M.D. London: W. B. Saunders & Co. 1902.

WE have pleasure in calling the attention of our readers to the first volume of the handsome series now in course of publication as an authorised English edition of Nothnagel's *Specielle Pathologie und Therapie.* The present intention is to publish in ten such volumes the most valuable part, from the practical point of view, of the great encyclopædia just mentioned, and it is intended that all these volumes shall appear within two years. The English edition, moreover, is not merely a translation from the German, but is to be enriched by the experience, and brought up to the date of publication by the annotations of the various specialists who edit the different volumes.

As Professor Osler remarks, Professor Curschmann has had exceptional opportunities of studying typhoid and typhus fevers, and his original monograph on enteric is recognised by specialists as the standard authority on the subject. For the convenience of those to whom the German edition has been available, we may quote from Professor Osler's summary the principal changes which have been made in the English edition. The bacteriology of typhoid fever has been revised and added to, especially with regard to the distribution of the bacilli in the rose spots, urine, and blood. Many additions have been made to the chapter on pathology. The literature of the localised lesions caused by the typhoid bacillus in various parts of the body has been brought up to date. Advantage has been taken of the work of Thayer on the blood, and of Keen on the surgical complications, in enteric fever. The chapter on perforation and peritonitis, and the section on hepatic complications, have been rewritten. Additions have been made to the section on bacteriological diagnosis, and Wright's method of vaccination has been described. With the author's concurrence, the additions have been made to run continuously with the original text.

Apart altogether from the merit of Professor Curschmann's monograph, it is needless to say to our readers that a work which has passed through Professor Osler's hands, as the present one has done, must command respect and attention. Apparently, however, the American editor and his assistant, Dr. Cole, have allowed their share to merge completely in the original. The work is beyond praise, and the literary style and letterpress are themselves attractive. Three-fourths of the text are devoted to typhoid fever, and the remaining fourth to typhus. The volume closes with an index.

A Treatise on the Acute Infectious Exanthemata. By WILLIAM THOMAS CORLETT, M.D., L.R.C.P. Lond. Illustrated by 12 Coloured Plates, 28 Half-tone Plates from Life, and 2 Engravings. Philadelphia: The F. A. Davis Co. 1901.

THIS is an elaborate treatise on six of the infectious fevers—viz., small-pox, vaccinia, chicken-pox, scarlet fever, measles, and German measles. Apart from the very comprehensive manner in which these diseases are described, the special feature of the work is its richness in illustrative plates, a considerable number of which are coloured. The author has particularly borne in mind the difficulties of diagnosis in the case of the exanthemata, and the appendix contains a table giving the details by which the physician would be guided in the differential diagnosis of the affections (with the exception of vaccinia) which have been mentioned above. There are also instructions for disinfection. The work impresses us as an excellent one, and we cordially recommend it to those who are interested in the study of this very important group of diseases.

A Text-Book of Medicine for Students and Practitioners. By DR. ADOLF STRÜMPELL. Third American Edition, Translated by permission from the Thirteenth German Edition, by HERMAN F. VICKERY, A.B., M.D., and PHILIP COOMBS KNAPP, A.M., M.D., with Editorial Notes, by FREDERICK C. SHATTUCK, A.M., M.D. With One Hundred and Eighty-Five Illustrations in the Text and One Plate. London: H. K. Lewis. 1901.

THIS great work by the German master in medicine needs no commendation from us. Its merit is recognised in, and demonstrated by, the fact that translations have appeared in at least eight languages:—English, French, Italian, Spanish, Russian, Modern Greek, Turkish, and Japanese. Some of these translations have passed through several editions. Seven editions have appeared in Germany since the second American edition was published in 1893. As the present volume extends to more than twelve hundred closely printed pages, the translation has involved much labour, and our hearty thanks are due to those whe have made available for us in so convenient a form this monument of German industry.

Essentials of Diseases of the Nose and Throat. By E. BADWIN GLEASON, S.B., M.D. London: Henry Kimpton. 1901.

THIS book, printed in America, forms one of "Kimpton's Essential Series," arranged in the form of questions and answers. "To the recent graduate in medicine," the author says, "who wishes to take a special course in a nose and throat dispensary, a little book will probably prove more valuable than a large volume, in enabling him to acquire, *in the shortest possible time,* those rudiments of rhinology and laryngology which are essential" to appreciate what he sees and hears in the dispensary. And, again, "the busy general practitioner who, from the force of circumstances, finds himself obliged to treat disease of the nose and throat, *can find quickly here*, in a condensed form, the essentials of diagnosis and treatment in any given case." The italics are ours, to emphasise the question—What more could one wish? The whole thing is as simple as looking up an A B C time-table. But condensed information picked up in a hurry is usually as quickly forgotten; and, although the information given here, in the form of replies to specific questions, is sound and to the point, the educative value of such a book is very questionable.

Impressions of a Doctor in Khaki. By FRANCIS E. FREMANTLE, M.A., M.B., B.Ch. Oxon., M.R.C.P. London: John Murray. 1901.

WE had occasion, in a recent review, to comment on the oracular manner in which Volunteers, who have been out in South Africa for six or twelve months, comment on the faults of the several branches of the service, and criticise the conduct of the whole operations in the field. The author of this work displays this same self-assurance in every chapter, and we are left at the end of the book with the impression that, had the management of the medical service of the army been from the first placed in his hands, all would have been well. Among the many critics of the R.A.M.C., however, it must be admitted, few had so wide and varied an experience as Mr. Fremantle of actual work in hospital and on the field. Sent out at the very commencement of the war, he was for three months on the staff of No. 1 General Hospital at Wynberg, then, as the result of the publication of some rather injudicious articles in the *Guy's Hospital Gazette*, he was "stellenbosched," and sent home on duty in an hospital ship. After "having it out" with the Director-General, he agreed to return to the seat of war, and was on his arrival sent up to Bloomfontein, where he was temporarily attached to the Highland Brigade Field Hospital. From this he was transferred to the Field Hospital of the 19th Brigade, and as a medical officer of that section treked the long and weary journey to Kroonstad; from thence he travelled *via* Lindley and Heilbron to the Vaal, was present at the action of Doornkop, paid a flying visit to Johannesburg, and witnessed the march-past of the troops on their triumphal entry into Pretoria. Finally, he spent three months in charge of the sick at several stations on the line from Kroonstad to the Vaal, making Wolvehock his centre. Very few civil surgeons could have had anything like Mr. Fremantle's luck, and, to crown all, he was, after his return home, made Assistant-Secretary to the Army Medical Reorganisation Committee. We do not know if the latter appointment was conferred on the same principle as that which operates when a recalcitrant town councillor is made a bailie.

The early chapters of this book were in substance published in *Guy's Hospital Gazette*, and brought down on the author the reproof of the War Office. We do not know how much modification they have undergone before publication, but are satisfied that they would have been improved by extensive excision. The quarrels of Mr. Fremantle with his chiefs of the R.A.M.C. at the hospital at Wynberg are not pleasant reading, and do not "tend to edification." The three points on which he felt especially sore were—(1) That he discovered the officers' wards to be without soup-tureens, and on reporting it, was reproved by the major in charge of those wards; (2) that he was expected to take the opinion of his colonel before doing major operations; and (3) that he applied to the Red Cross Commissioners for clocks for the wards, and that the colonel refused to let them be supplied. In all three respects, we think Mr. Fremantle was in the wrong. Discipline must be maintained in all departments of the army, and it is essential to that discipline that the control of the hospitals should lie with the superior officers, and that each subaltern should not be a law unto himself, whether he be a civilian surgeon or junior member of the R.A.M.C. Irrespective, however, of military discipline, we fancy Mr. Fremantle would have been as much "out of court" in regard to his three complaints in any general hospital in this country, as he was considered to be at Wynberg.

Our author writes with a flowing pen, and gives his readers no dull pages. Once away from Wynberg, he takes more charitable views of the R.A.M.C., and bears ungrudging testimony to the excellent work accomplished, both by doctors and orderlies, under most trying circumstances. The more reason, say we, for revision of the early chapters of the book.

One of the most interesting chapters is that entitled "A Day with the Boers," where he describes an expedition he took from Wolvehock in search of a loyalist farmer, who was supposed to be wounded and a prisoner in the hands of the Boers. In order to obtain information he went from farm to farm, and in a short time came across a Boer commando, under a man named Richard Mears, and he thus describes the appearance of the latter:—"The commandant, on the other hand, who cannot have been much over 30, was got up in every way as a British officer, and was neatly dressed, with a trim brown beard. He wore a 'Sam Browne' belt, and had a sword on his saddle. He was wearing the khaki serge coat of an English captain, with two stars on each shoulder-strap, and the Chitral medal on his left breast. Both ribbon and coat looked as if they had seen about three months' service. He had Bedford-cord riding-breeches and spat-gaiters, and a brand new pair of brown boots with English spurs." Fremantle enjoyed the society of this "swell brave" for nearly twelve hours, and his account of their conversation, and the lies Mears told, is in the very spirit and letter of romance.

In a final chapter, our author discusses (1) the medical lessons of the war; (2) the changes he considers necessary to make the Army Medical Service effective; and (3) the scheme adopted by Mr. Brodrick's Army Medical Reorganisation Committee. Under the second head, he discusses a scheme of his own, which, if carried out, would result in the medical service of the army being carried on mainly by civilian surgeons. He even goes so far as to propose that the mobilisation of the general hospitals at the seat of war should be undertaken by the civil hospitals at home. "The civil hospitals," he says, "St. Thomas', for instance, Guy's, St. Bartholomew's, Edinburgh, Dublin, would each be ready to fit out a general hospital." He further proposes that the military hospitals should each be managed "like a civil hospital, by a board appointed for the purpose, the *administration by a non-medical officer*, with regimental training, who would belong to the reformed R.A.M.C." We do not know if he submitted this scheme to the consideration of Mr. Brodrick's Committee, but, if so, we can understand their thinking it visionary and impracticable. We must, however, admit to so far sympathising with Mr. Fremantle, as to consider a closer relationship between civilian and military medical service essential, if we are to have a repetition of the demands which have in the past two years been made upon medical men for service in war operations.

We note a number of trivial errors which might easily have been avoided. Thus, he speaks of *electric* trams at Las Palmas, when no such things exist, the very primitive street trains being run by means of steam. He mentions (on p. 51) 30th October, as "the day we sailed from Southampton," and we turn back a few pages and find the date of sailing was the 20th of that month. Again, he is surely in error in speaking of Mr. Logan, of Matjesfontein, as a "Highlander," but perhaps he imagines every Scotsman comes from the Highlands. He is much too hard on Johannesburg when he says the "town is a wretched desert of brick and iron, without one fine building; it is a meshwork of wires, and a mass of blatant advertisements." Indeed, he seems to have repented of this judgment, for on the very next page he speaks of the civil hospital at Johannesburg as "a splendid building, in very fine grounds, and very well equipped." Lastly, it was General *Charles* Knox, and not General *Walter* Knox, who was present with General Piet de Wet at the Scottish Hospital sports on 28th July, 1900.

The book is excellently got up, and is copiously illustrated with photographs and drawings; it is very good reading, and, in spite of rash judgments and "cock-sure" opinions, is eminently worthy of perusal.

Therapeutics: Its Principles and Practice. Eleventh Edition. By HORATIO C. WOOD, M.D., LL.D., and HORATIO C. WOOD, Jun., M.D. London: Smith, Elder & Co. 1902.

IT is a quarter of a century now since the first edition of this treatise was published. During this period it has already passed through ten editions. This, of itself, indicates the great value placed upon the work by students and practitioners. The plan of the book is still retained as in previous editions, and depends on the fact that the chief end in view is the setting forth of the principles of therapeutics as based on pharmacological research. It is divided into two parts, the first dealing with remedies and remedial measures, not drugs, the second with drugs. The latter, of course, constitutes the chief portion of the work.

All the remedies in this latter portion are grouped according to their chief therapeutic or pharmacological action. Thus, inorganic salts, carbon compounds, and vegetable drugs are not considered in sections as is often done in text-books. From the practitioner's standpoint, this is an advantage, though, from the student's point of view, it is doubtful, because he needs some preliminary training in materia medica. It is, however, for the advanced student and the practitioner that the book is written, and it is to be remembered, as already indicated, that it is essentially a work on therapeutics.

In the publication of this edition, father and son have become joint authors, and much labour has been expended in bringing the whole work up to date. Though the general plan of the book has been retained, yet so much has been rewritten as to constitute it in a great measure a new book.

The principal changes in the work, as the authors indicate, consist in making the various articles more closely conform to a uniform, carefully thought-out plan of presentation; in putting in small type the descriptions of the general effects produced by drugs in the lower animals, minor discussions, and other matters of less importance than those considered in the general text; in cutting out certain discussions which were necessary in the earlier editions of the book, but have lost value at this time, because of the general uniformity of professional opinion that has been reached in regard to their conclusions; in very carefully considering the language so as to obtain as great conciseness as is compatible with clearness; in taking the references out of the body of the text and putting them in nonpareil type at the end of the various chapters; in the addition of articles on a number of new drugs, and in the insertion of the approximate metric equivalents of apothecaries' weights and measures, used in giving the doses.

The preparations and the drugs correspond with those of the *U.S. Pharmacopœia*, and though there would be a distinct advantage to readers in this country if references were also made to those of the *British Pharmacopœia*, yet the drawback is not great, and need not be considered by one who has an ordinary knowledge of his materia medica.

We have the greatest confidence in recommending this treatise as one of the best in the English language.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

NERVOUS DISEASES AND INSANITY.

By Dr. R. S. STEWART.

Benign Hystero-alcoholic Paralysis of the Upper Limb. By Gauraud (*Archives de Neurologie*, February, 1902).—The six cases here recorded were those of vigorous, muscular men in the prime of life, without neuropathic heredity, and presenting the outward appearances of excellent health. They were old alcoholics, and two of them were intoxicated a few hours before the appearance of the paralysis. In these two the paralysis appeared during the night; in the other four during the day, three times suddenly in the middle of work and without warning, and in one case slowly and subsequent to by no means intense or persistent pain in the cervico-dorsal region. The appearance of the paralysis was generally accompanied by a slight sensation of numbness or tingling, and there were no apoplectic seizures, vertigo, or acute pains. Except in one case, the paralysis always affected the right limb, and predominated at its terminal extremity. In the affected segments, all voluntary movements appeared to be equally compromised, and no systematic distribution of the paralysis in any physiologically differentiated group of muscles was observed. The degree of motor impotence was very variable. Certain of the patients had only a more or less accentuated paresis. They could still flex and extend their fingers, but could not hold small objects, manipulate their tools, or exercise energetic pressure with their hand. In the majority of the cases, there were noted very marked troubles of cutaneous sensibility, without, as a rule, any vasomotor or secretory alteration. The treatment employed—energetic faradisation—was always efficacious. In those cases in which the paralysis had only existed from two to four days, one application sufficed, while three or four were necessary where the affection had existed for several weeks.

Extension in the Treatment of Nervous Diseases. By Kouindjy (*Archives de Neurologie*, February, 1902).—This writer strongly advocates the application of extension in place of suspension, and points out that its use is unattended by any of the risks attaching to the latter in such cases as the following:—Tabetics presenting cardio-vascular lesions, those with tubercular or emphysematous lesions, apoplectiform or epileptiform attacks, those who are very anæmic, who have a tendency to vertigo or syncope, or who are very obese. The use of the extension couch is suitable for a large number of nervous maladies, and is destined, the writer thinks, to prove of enormous service in the treatment of neurasthenics in particular.

Prognosis of Tabes. By Brissaud (*Archives de Neurologie*, February, 1902).—In a discussion on this subject at the Neurological Society of Paris, certain questions were raised by this observer. There appears to him to be a much greater number of tabetics, but among these a very much smaller number of cases of progressive locomotor ataxia than formerly. There seem to be many more cases of tabes with arrested or aborted evolution. Is there, he asked, less progression than formerly in this disease? is there, in certain cases even, a cessation of progression or sometimes even retrogression? In what measure is the specific treatment responsible for the production of this result? The gravity and frequence of syphilis among the Arabs and the Chinese in comparison with the rarity of tabes in these is recognised. If syphilis plays a *rôle*, it seems that the soil must also play its *rôle*. Is there, then, some alteration of this soil, a variation of the disease, or a therapeutic variation?

Marie is of opinion that the tabes are much less grave, and show a tendency to arrest. Inco-ordination in particular is less frequent and slighter. He attributes this result to the intense and prolonged antisyphilitic treatment, and thinks that it is the disease and not the soil which changes.

Babinski thinks that the gravity of tabes diminishes. He finds ataxia only in about 5 per cent of his cases. If this gravity is less apparent than formerly, it may be because more incipient or slight cases are recognised owing to the fact that early signs which were formerly unknown are now recognised, but treatment must also be taken into account. Cases of tabes arising from insignificant syphilis may be either very intense or very slight. It may be benign because the original virus is benign, or because of the good constitution of the subject. It is by reason of prolonged treatment that one can now regard tabes as less grave, and need not consider as hopeless a patient who manifests the prodromata.

Raymond remarks that there are cases of tabes evidently of rapid march, in which mercury and iodide bring about a cure of the inco-ordination in some days, but the tabes remains. In these, there are two things to be considered. On the one hand, there are the simple syphilitic lesions which disappear under treatment; but, on the other, there are the tabetic lesions which remain fixed.

Ballet believes that there are more benign tabes than there were twenty years ago, but not that tabes is more benign. We see more of the benign variety for two reasons—the better treatment and the better diagnosis.

The Pathological Anatomy of Huntington's Chorea. By Weidenhamer (*Archives de Neurologie*, February, 1902).—The macroscopic appearances in this case were as follows:—Diminished volume, without asymmetry, of the brain, cerebellum, and cord; slight opacity and thickening of the pia mater of the cerebral convexity, particularly in the course of the fissures; slight external hydrocephalus; cortical atrophy, particularly in the frontal and central regions; internal hydrocephalus; slight granular ependymitis of the fourth ventricle; atrophy of the heart, liver, spleen and kidneys.

On microscopic examination, the pia appeared thickened, with lymphoid infiltrations, disseminated extravasations and local infiltrations of the adventitia of the vessels. In the cortex and white substance very pronounced alterations of the vessels were observed, such as thickening of the walls, hyaline degeneration, obliteration of the capillaries, and lymphoid infiltration of the adventitia. There was proliferation of the nuclei of the neuroglia, with swelling of its cells. The cortical nerve cells presented central chromatolysis, with diminution and dense granulation of the nuclei, and deposits of pigment round the nucleus, and there was very pronounced rarefaction of the tangential fibres of the cortex, notably in the frontal and central convolutions. The same alterations existed in the cerebellum and cord, and were more pronounced in the antero-lateral than in the posterior columns. The author designates these lesions as chronic hæmorrhagic diffuse encephalitis, considers the medullary and spinal lesions as primary, and due to the same cause as those of the brain, and sees an analogy between the chorea of Huntington and the other diffuse degenerations of the nervous system, such as general paralysis and senile dementia.

Slow Compression of the Cord giving rise to Spasmodic Paraplegia. By Brissaid and Feimdel (*Archives de Neurologie*, March, 1902.—From a study of two cases, it is concluded that complete and sudden section of the cord brings about flaccid paraplegia with abolition of the reflexes and total loss of sensibility, while slow compression, acting in the fashion of a ligature indefinitely prolonged, and transforming the tissue of the cord into a veritable cicatrix, gives rise to spasmodic paraplegia.

Tumour Slowly Compressing the Cord and giving rise to Spasmodic Paraplegia. By Cestan (*Archives de Neurologie*, March, 1902).—This is a record of two cases in which psammoma of the cord had existed for a long period. The tumours were hard and infiltrated with gravelly concretions, and in their neighbourhood the cord was reduced to a transparent lamella in which persisted some profoundly altered nerve tubes. The beginning had been very rapid, but the course was slow and the symptoms presented were those of complete spasmodic paraplegia.

Acute Syphilitic Meningitis. By Widal. (*Le Progrès Médical*, 8th March, 1902).—This is the case of a man who, on admission to hospital, had severe headaches and continuous vomiting without fever. There were no syphilitic antecedents or signs of tuberculosis, and the liquid obtained on lumbar puncture contained lymphocytes. A little later signs of meningitis appeared, delirium, fever, &c. Specific treatment was instituted, and at the end of five days there was marked improvement, and soon afterwards the patient was cured. Some months after this attack analogous symptoms occurred, but similar treatment was followed by the same success. Recovery was, however, not complete, for some morbid phenomena remained, such as epileptoid trepidation and exaggeration of the reflexes. A further lumbar puncture still revealed lymphocytes in the cerebro-spinal fluid. In discussing the case, M. Widal rejects the supposition of hysteria, by reason of the absence of all symptoms or antecedents pointing to this, and because in hysterics the cerebro-spinal fluid is always found free from figured elements, and thinks that syphilis ought to be regarded as the cause, lymphocytosis being observed in cases of syphilitic meningitis.

The Hebrew Insane. By Hyde (*American Journal of Insanity*, January, 1902).—An investigation of the records of the New York City Asylum for males reveals an enormous increase in recent years of the admissions of insane male Jews, an increase attributed to the increasing immigration of that nationality from Europe. The recovery-rate for those under 30 years of age is good, but there is a strong tendency to relapse, and masturbation and money losses are frequent assigned causes. Of the admissions, 10 per cent were Jews, and in 4·18 per cent there was a history of syphilis—a rate which shows that Hebrews suffer less from this disease than Christians, and alcoholic excesses are, too, comparatively rare. General paralysis was present in 18 per cent, a proportion not so high as that which obtains among Christians.

The Pathology of Insanity. By Pettit (*American Journal of Insanity*, January, 1902).—In the course of this paper, stress is laid upon the marked difference observed in the general morbid anatomy of general paralysis, as distinguished from that of other forms of insanity. All the autopsies on paretics showed great uniformity in gross lesions. When complications occurred, they were located usually in serous membranes, the materies morbi of paresis showing an elective affinity for endothelial elements, wherever found, either in the cerebral capillaries and lymph spaces, or in similar histological elements in other portions of the body. Attention is drawn to a variety designated the amyotrophic, in which there are pure paretic cerebral and spinal lesions accompanied by muscular atrophy, and contractures and flexion of the extremities, sometimes with extensive decubitus. The general semiology, the writer states, seems to slowly undergo certain changes. It is observed that a larger number than formerly run through the course of the disease with a less degree of mental disturbance, that grandiose symptoms are not so common, and that quiet dementia supervenes upon the earlier mental perversion, or, again, this quiet dementia may be alone and primarily the type of alienation. This points to some possible modification of the specific cause in its passage through successive generations of men. It is possible that in the future paresis may be isolated from the groupings of insanities, and treated as a lesion not necessarily involving mental incompetency, and that the disease may even run its specific course without fatality in a small ratio of patients who live many years in a state of instinctive fatuity.

Tumour of Frontal Lobes in which Sleep was a Marked Symptom. By Cowan (*Journal of Mental Science*, April, 1902).—The initial symptom in this case was gradually advancing mental depression, followed after eleven days by excitement lasting about two months, and followed by marked and persistent sleepiness lasting up till death, which occurred about six months afterwards. The sleep appeared to be quite a natural one, and the appearance of the patient was that of a person overwhelmed by fatigue. There was some complaint of headache and optic neuritis, but no other noticeable symptoms of nervous disorder. At the *post-mortem*, a large tumour of a sarcomatous nature was found, growing from the membranes and infiltrating both frontal lobes on their under surface to a depth of about 3 inches.

SURGERY.

By GEO. H. EDINGTON, M.D.

Cancer of Undescended Testicle (Abdominal Ectopia).—Ch. Kæppelin considers, from a survey of the literature of the subject, that the majority of authors are in error when they state that cancer occurs only in the inguinal form of undescended testicle, and that deep cryptorchism is exempt. While observations have been few, they have nevertheless shown that abdominal cryptorchism is no guarantee against malignant neoplasm. In view of the difficulties besetting the diagnosis, the lesion is, perhaps, not so rare as is thought. Etiology is obscure; except in retro-parietal situation, abdominal testicle is not exposed to injury. As in normally descended gland, cancer occurs between ages of 25 and 45. Heredity does not seem to play any part, nor is there any determining cause discoverable, as a rule. The tumour is situated laterally, partially or completely occupying the iliac fossa, sometimes encroaching on opposite side; it may also extend into small pelvis, or lodge itself there entirely. The mass is a rounded oval, varying in size from turkey's egg to that of the fœtal head; surface is smooth, or, exceptionally, bossy; capsule is formed by thickened albuginea, and consistence of mass is for most part soft and uniform. The cut surface resembles encephaloid tumour. The epididymis is often involved, forming a secondary mass, which preserves the shape of the organ. The tumour possesses a vascular pedicle (constituents of cord) surrounded by a short mesentery. Adhesions are constant to intestines, omentum, bladder, recto-vesical pouch, and femoral arch; they are more or less vascular. Rectum or bladder may be compressed, nodules are sometimes present on peritoneum, and sometimes ascites, but always in small degree. Visceral deposits are uncommon, but glands are often affected. One reported case presented an inguinal varicocele.

Histologically.—Only four out of seven cases were examined. Of these, two were epithelial; one a globo-cellular sarcoma, and one a large-celled sarcoma. Kæppelin looks on them as probably all epithelial.

Symptoms.—Severe pain, spontaneous or elicited on effort, is first sign. It is seated in abdomen, whence it radiates to loin, thigh, perineum, and scrotum. Probably tumour has been growing quietly for some time previously, with perhaps vague, intermittent lumbar pain. In one or two months, tumour becomes appreciable as *lateral* swelling; functional troubles arise, and health breaks down. The tumour is felt in the iliac region, is not very movable, and, if it descends into pelvis, may be felt *per rectum*. Inguinal glands are not enlarged, and abdominal rarely distinctly so; sometimes supraclavicular are affected (*Picqué*). Patient generally says nothing about cryptorchism, and the surgeon has to be on the look-out for it. *Functional symptoms:*—Pain is never absent, either sharp, or slight at first and progressive; it is situated in abdomen, radiating to loin, thigh, perineum, or scrotum; it is spontaneous, but is made worse by fatigue, labour, repeated efforts, or prolonged standing. Tenderness is rare. Pressure on vessels or nerves occurs only at advanced stage, if tumour bulky. Distension and vomiting are observed, and emaciation and cachexia set in, and are marked before death.

Diagnosis.—Examine inguinal canal and scrotum in every case of abdominal tumour in the male. If testicle is in neither situation, probable diagnosis is new-growth of retained testicle. *Movable kidney* is possessed of mobility, and perfect reducibility; *cancer of kidney*—pain, and hæmaturia (varicocele of little value, as it may occur in cancer of ectopic testicle); hydronephrosis—bulk varying with discharge of quantities of urine, less likely to cause mistakes. *Colon*, in affections of this gut, digestive troubles are more marked, fæces may contain blood and cancerous *débris;* subacute obstruction and chronic enteritis predominate; colicy pain, and no irradiation. *Appendicitis* may be eliminated by absence of pain at M'Burney's point, absence of fever, and by examination of tumour.

Treatment.—(*a*) *Preventive.*—When gland is accessible to palpation behind internal ring, it should be drawn down into empty scrotum, and fixed there. If not felt, leave alone, unless child is cryptorchid. Hypothetical malignant degeneration is not sufficient reason for operation, but impotence, with double ectopia, is. (*b*) Once the *lesion has occurred*, abstention means death, and interference is necessary. There are two methods of operating :—(1) *Lateral incision* parallel to the arcade of Fallopius exposes tumour, but does not facilitate removal, and only imperfectly permits examination of lumbar and iliac fossæ. (2) *Median*, sub-umbilical, with patient in Trendelenberg's position, is better. On exposing tumour, adhesions are to be separated. Visceral adhesions are softer and easily broken down by hands; parietal are firm and vascular, and require ligature. This having been done, the pedicle is sought for (behind, usually), ligatured, and cut. Glands are examined and abdomen closed. If hæmostasis imperfect, packing may be used. When performed early, *results* of operation are good, so far; wound heals quickly and well. The case reported by Deprès was well four years later; that of Guyon, ten years. In advanced cases, intervention hastens the end, and should be abstained from, unless the surgeon's hand is forced by the suffering of the patient.—(*Gaz. des Hôpitaux*, 11th January, 1902.)

Malignant New Growths of the Imperfectly Descended Testis.—The majority of these growths are *sarcomatous*. This may depend on the abnormal structure of testes which are imperfectly descended, viz., atrophic or undeveloped seminiferous tubules, with increase of cells in interstitial tissue. These cells may be epithelial or mesoblastic, probably the latter.

Sarcoma of testis, descended or not, is comparatively rare. Varieties usually met with are—round-celled, spindle-celled, mixed, and myxo-sarcoma. Round-celled are commonest, then mixed-celled; both are rapidly growing, commencing generally in testes, rarely in epididymis. At first confined by tunica albuginea, and often surrounded by blood-stained fluid in tunica vaginalis; later, involves surrounding structures, after having previously infected lumbar lymphatic glands, or caused deposits in viscera. Presence of cartilage has not yet been recorded (*cf.* descended organ). Disease is one of middle-life (20 to 40 years), occurs most commonly in inguinal, then in abdominal position. This is interesting, as showing independence of growth on injury, since abdominal inclusion protects from injury, but not from sarcoma. Previous inflammation, other than traumatic, is apparently rare in cases of tumour in arrested testis. *Carcinoma* is less common, and appears, more than sarcoma, to be associated with injury. Several varieties met with are—encephaloid, scirrhous, colloid, and, rarely, chondro-carcinoma. Cells are spheroidal, oval, or polygonal, are rich in protoplasm, and have not, as a rule, distinct outlines. Most probably the cells arise from imperfectly formed epithelial elements of the seminal tubules. The infrequency of carcinoma is probably due to the fact that there is little active epithelium in the poorly-developed organ. It occurs later in life than sarcoma (30 to 50 years). It has not been recorded as occurring in the testis lying in perineum, or in Scarpa's triangle.—(M'Adam Eccles, "Hunterian Lectures," *Lancet*, 15th Mar., 1902.)

Retro-peritoneal Hæmatoma, probably Originating in Hæmorrhagic Pancreatitis.—Victor Pauchet communicates a case, of which the following is a summary :—

The patient, a married woman, aged 51, had had a normal pregnancy when aged 25. She was obese, and had suffered during last two or three years from "hepatic colic," so-called. The last attack occurred in May, 1898, when her medical attendant diagnosed infective cholangitis. Two months later, the liver was of normal size again, and patient had resumed business. She was, without any traumatism, suddenly seized with violent pain in epigastrium, when out walking. She was conveyed home in a cab, and morphine was administered. Rigidity of abdominal muscles prevented palpation of viscera;

facies was not bad, and pulse a little rapid, but of almost normal fulness. Three days later, distinct swelling was palpated in left hypochondrium; more distinct eight hours later, and prolonged into epigastric region. Temperature was normal. In June, general condition noted as good, although there was some emaciation. Urine contained neither albumen nor sugar, and pelvic and thoracic organs were normal. Irregular, not sharply defined, mass occupied epigastrium and left hypochondrium. Kidney, liver, spleen, and remainder of abdomen were eliminated. On gaseous distension, stomach descended in front of swelling. Percussion showed dulness between stomach and colon, and Pauchet concluded that he had to deal with peritoneal swelling behind stomach and great omentum. *Median laparotomy* was performed, and an opening made in omentum between stomach and colon. Allowed escape of clot from small sac of peritoneum. Pancreas appeared to form part of the wall of this hæmatoma, and on cavity being sponged out, bleeding was started, necessitating temporary packing with gauze. Gauze was withdrawn after ten minutes, and bleeding did not recur. The friable, vascular mass suggested sarcoma of lesser sac, or vascular cancer of pancreas. The wound in omentum was therefore closed. More than three years after, patient continued in perfect health.

Of late years, the pancreas has come within the reach of operative surgery, and has been found to be liable to lesions, acute or chronic, of various kinds—abscess, calculus, tumour, simple or specific inflammation, cirrhosis, &c. *Symptoms:*—Moderate jaundice (*subictère*) and epigastric pain are common to pancreatic, gastro-duodenal, and hepatic affections; *special* symptoms drawing attention to pancreas are sialorrhœa, fatty diarrhœa (stearrhœa), diminution of indican in urine; *general* symptoms are emaciation, weakness, glycosuria, and, in septic cases, febrile rises; *objective* signs are present only when lesion has acquired certain volume. Swelling projects most frequently between stomach and colon, moves synchronously with aortic pulsation, but is unaffected by respiratory movements. In *hæmorrhagic pancreatitis*, pancreas may be infected through duct of Wirsung, by contact with neighbouring inflammatory lesion (gastric ulcer), or by circulation in course of infectious malady (enteric or influenza). Slight pancreatitis terminates in resolution, more severe in abscess, chronic in cirrhosis. Sometimes inflammation progresses to hæmorrhage, which results from combination of several factors—infection, thrombosis, necrosis, and auto-digestion. Hæmorrhage varies with size of vessel opened. This form of pancreatitis has *sudden* onset of symptoms—epigastric pain, vomiting, and syncope. If hæmorrhage slight, symptoms disappear after some days; if moderately abundant, hæmatoma is formed; and if abundant, patient succumbs, with symptoms of internal bleeding. *Diagnosis.*—Severe cases are diagnosed *post-mortem*; in slight or medium, pain at commencement resembles hepatic or renal colic, gastralgia from ulcer, appendicitis, or intestinal obstruction. Glycosuria, stearrhœa, and presence of swelling (retro- or subgastric), whose dulness is diminished by inflation of stomach, make diagnosis easy. *Treatment.*—Laparotomy, incision of swelling by transverse cut in omentum, evacuation of collection and marsupialisation of cavity.—(*Gaz. des Hôpitaux*, 9th January, 1902.)

DISEASES OF THE SKIN.

By W. R. JACK, M.D., B.Sc.

Microbacillus of Seborrhœa.—Schamberg (*Jour. Cut. and Gen.-Ur. Dis.*, March, 1902) in examining the sebum from the nasal follicles of 50 individuals, some healthy, others affected with various types of skin disease, found this bacillus present in 45. In 27 of these the skin was oily, in 16 it was dry, while in 2 the condition of the skin was not noted. The bacillus was present in great abundance, and practically in pure culture. It is identical with the organism which Sabourand regards as the exciting cause of seborrhœa, and which he considers as an accessory, and even at times as the exciting cause of acne. He attributes to it also a similar *rôle* in the production of ordinary baldness and of alopecia areata, the form of disease being presumably determined by peculiarities of the soil. But Schamberg believes that the bacillus may be found in the nasal sebacous follicles, and perhaps elsewhere, in 90 per cent or more of adults. If it be answered that nasal seborrhœa is almost universal, Schamberg points out that in 16 of his 50 cases the skin of the nose was dry, and not oily; and Sabourand denies the existence of seborrhœa sicca. It is easy to see, in the presence of enormous numbers of the microbacilli in the nasal follicles of nearly all adults, that they might readily be propagated to comedones, and to the hair follicles of the scalp. It is possible that they may also be present in other cutaneous disease than those mentioned. Evidently, if the microbacillus is so universally present, and only a small proportion of people suffers from the diseases which it is supposed to excite, the general predisposing causes of these diseases must be of preponderating importance, and the presence of the exciting organisms of secondary significance. The evidence of the parasatic nature of seborrhœa, acne, and baldness is inconclusive. It has still to be proved that the microbacillus is not more or less normally present in large sebaceous glands.

Leucotrichia Annularis associated with Developmental and other Pigmentary Disorders.—Meachen (*Brit. Jour. Dermatol.*, March, 1902) reports a case of this rare disorder occurring in a boy of 8. The family history was noteworthy for the presence of supernumerary toes in the members of the maternal side, and of webbed toes in a maternal uncle. There was no marked neurotic taint. The boy had suffered from rickets, and he was born with a supernumerary toe on the right foot. The speckled condition of the hair was first noticed at the age of three months. He had never been treated. The growth had always been plentiful, and there were no bald patches. Each hair presented a speckled appearance, and consisted of dark and light segments in regular alternation. The white segments measured one-fifth mm.; the dark, three-tenths mm. Microscopically, the white segments were seen to contain refractile streaks and elongated air bubbles, this condition being confined to the medulla. There was no thickening of the hair-shaft at these points. The hair was not specially brittle. There were no white spots on the nails. There were numerous patches of light brown pigmentation on the abdomen, back, front of the left knee, and dorsum of the right hand. These had been present since early infancy, and had not tended to spread.

The right foot showed a small scar, the result of removal of the supernumerary little toe. The second and third toes of the left foot were webbed. After a review of the nine hitherto recorded cases, Meachen goes on to consider the cause of the affection. He inclines to think that the association of melanodermia and the congenital deformities tends to show that it is due to a primary defect in the ovum, and he accepts Unna's theory of an alternate increase and decrease in the functional activity of the matrix.

Purpura, ending Fatally, associated with Hæmorrhage into the Suprarenal Capsules.—Little (*Brit. Jour. Dermatol.*, Dec., 1901) gives details of eleven cases in which this association was observed. Of these, four are personal observations. In all, the cause of death appeared to be symmetrical suprarenal hæmorrhage, and in all the symptoms were surprisingly constant. They are as follows:—"A young child, usually in the later period of infancy, is apparently in normal health. He wakes up one night, and is a little sick; he lies restlessly till morning, passes a loose motion or two, and suddenly develops a purpuric eruption, and becomes alarmingly ill. He is dead in twenty-four hours, and there is no pathological lesion of importance to be detected at the autopsy, except gross hæmorrhage into the suprarenal capsules." The author then quotes two cases of Talbot's, very similar, except for the absence of purpura, and considers that as death was very rapid in both, and the onset of purpura is usually late, they may be brought into the same category by supposing death to have taken place before purpura was possible. He refers also to cases of suprarenal hæmorrhage, different in their clinical features, in which purpura was not present; to cases (four in number) of unilateral suprarenal hæmorrrhage more or less rapidly fatal, but without purpura; and to the 200 cases of fatal purpura collected by Mackenzie, in which there is no record of suprarenal hæmorrhage.

Reviewing more particularly the group of cases which is the subject of his paper, the author refers to Andrewes' view that the condition is one of acute toxæmia, and dismisses his assumption of variola as an explanation. Although the blood in two of the author's cases was sterile, yet streptococci were found in large numbers in the vessels of the dermis, and the same organism has been found in other cases of the same kind, and is the most frequent in cases of purpura associated with other clinical conditions. It "may be said to hold the field against competition in various types of purpura, and it is so far the only organism which has been found in the class of cases under immediate consideration." It is impossible to decide how far it is responsible for the suprarenal hæmorrhage. Recent experiments tend to show that it may produce such hæmorrhage. Thrombosis and embolism alone are not enough, according to Unna, to explain purpura. There must be a particular chemical influence, or some definite micro-organism which causes bleeding. Destruction of the suprarenals favours hæmorrhage, if it be sudden or complete, pigmentation, if prolonged and incomplete. Complete ablation of the organs in animals causes death within a few hours, and the cases above noted show that it does so also in man.

The gradual withdrawal of the suprarenal secretion produces symptoms of Addison's disease, its sudden cessation leads apparently to death. The secretion arises from the medullary part of the gland, and this portion was that principally affected by hæmorrhage in the cases mentioned. The secretion has been shown experimentally to maintain the tone of the cardiac and arterial muscles. The first result of its arrest would be dilatation of the blood-vessels and diapedesis, thus explaining the purpura. In the cases where purpura did not occur, it is probable that some portion of the glandular tissue remained undestroyed, and that the secretion was thus not completely abolished.

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GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 19TH APRIL, 1902.

	WEEK ENDING			
	Mar. 29.	April 5.	April 12.	April 19.
Mean temperature,	44·2°	43·0°	44·5° †	48·8° ‡
Mean range of temperature between day and night,	8·9°	13·7°	14·8° †	17·3° ‡
Number of days on which rain fell,	4	4	1	4
Amount of rainfall, . ins.	0·25	0·19	0·02	0·12
Deaths registered,	330	326	338	384
Death-rates,	22·1	21·9	22·7	25·7
Zymotic death-rates,	2·3	2·1	1·6	1·8
Pulmonary death-rates,	7·8	6·8	7·9	9·1
DEATHS—				
Under 1 year,	62	54	53	73
60 years and upwards,	70	78	80	96
DEATHS FROM—				
Small-pox,	...	2	2	1
Measles,	12	5	4	6
Scarlet fever,	2	3	4	...
Diphtheria,	4	3	2	3
Whooping-cough,	6	7	7	7
Fever,	...	2	3	4
Diarrhœa,	11	9	2	6
Croup and laryngitis,	...	1	1	1
Bronchitis, pneumonia, and pleurisy,	96	82	80	105
CASES REPORTED—				
Small-pox,	13	18	11	7
Diphtheria and membranous croup,	11	9	14	11
Erysipelas,	18	24	27	19
Scarlet fever,	49	59	50	40
Typhus fever,	...	...	...	...
Enteric fever,	11	20	18	21
Continued fever,	...	...	...	2
Puerperal fever,	...	...	3	3
Measles,*	98	83	113	116

* Measles is not notifiable. † 6th to 9th April only. ‡ 16th to 19th April only.

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SALOL IN THE TREATMENT OF SMALL-POX.

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Any investigation into the influence of drugs upon morbid conditions is surrounded by difficulties, dependent partly upon the variability of these morbid conditions themselves, and partly upon the idiosyncrasies of the patients towards the drugs employed. In no disease is this seen more clearly than in small-pox, where, as a result of the natural variability of the disease—both in its severity and course—and as the result of the modifying influence of vaccination, the influence of treatment is exceedingly difficult to assess.

In unmodified small-pox, the course of the disease, as estimated by the development of the eruption, would seem to be tolerably uniform; while its severity, as estimated mainly by the amount of the eruption, is very variable, and seems to depend upon a greater or less degree of susceptibility in the individual.

Out of 191 unvaccinated persons who have passed through the City of Glasgow Small-pox Hospital at Belvidere during the past ten years, not a single example of varioloid was observed; or, in other words, a single case in which the eruption ran a modified course, such as is so commonly seen among persons who enjoy a certain degree of protection from vaccination. Consequently, the influence of drugs upon the course of unmodified small-pox might apparently be studied with a fair amount of success, as there can be nothing easier than to observe any modification in the course of the eruption, seeing there is no modification in the course of the uncontrolled disease. But difficulties are introduced when we become aware of the great variations in the severity of the unmodified disease.

In small-pox, in vaccinated persons the difficulties are even greater. Vaccination would seem to influence small-pox, both with regard to its severity and its course, both of these being most readily estimated by an examination of the amount of the eruption and its development. While unmodified cases of small-pox may be seen occasionally presenting a moderately sparse eruption, yet, so far as our experience goes, it is rare to find in this class of cases so small an amount of eruption as is quite commonly to be seen in vaccinated persons suffering from the disease. It would seem, therefore, that vaccination has the power of so modifying the attack of small-pox that the amount of the eruption becomes greatly reduced, so that only one or two spots may constitute the entire rash. In many of these cases, while the amount of the eruption is very small, the rash runs a moderately complete course, passing through the papular, vesicular, and pustular stages, just as would occur in unmodified small-pox.

But in addition to vaccination exercising a modifying influence upon the amount of the eruption, it usually exercises a modifying influence on its course as well, and this may occur in eruptions of all degrees of abundance, so that in some cases the rash may be very sparse and pass through the papular stage, but reaches no further than the early stage of vesiculation, when it dries up or becomes absorbed. The most striking examples of the modifying influence of vaccination on the course of the eruption are those in which the eruption is confluent or semi-confluent, and where its course is so modified that in some cases the bulk remains papular, or in a state of early vesiculation, while the remainder passes on perhaps to a more advanced vesicular condition. In such cases pustulation does not take place, and neither does general crusting, the eruption becoming absorbed, leaving the surface covered with a white powdery desquamation, and giving an appearance as if the seat of most abundant eruption had been uniformly sprinkled with flour or chalk. This course is sometimes observed even in cases where hæmorrhage has occurred into the bases of the papules, though we have never observed it in cases of true hæmorrhagic small-pox—*i.e.*, those in which petechiæ, separate from the eruption, are present with hæmorrhage on the surface of mucous membranes. It is these cases especially which are apt to prove misleading in any observations made on the influence of drugs on the course of the disease, for it is not easy to predict that the eruption will abort, though, in a certain proportion, a peculiar dryness of the skin may suggest the possibility of this taking place. When drugs are administered to patients who present a confluent or semi-confluent rash, and that rash is cut short in its course, it is natural that the enthusiastic therapeutist should attribute the result to the action of his drug, or to his line of treatment; but it seems that the more closely the natural course of small-pox is studied in vaccinated persons, the more certain does it appear that modifications in the amount, and in the course of the eruption, are to be attributed more to a certain immunity conferred by vaccination than to the influence of the treatment.

In the earlier part of the present epidemic, salol was given to a few patients in doses of 30 grains, administered in divided doses, in each twenty-four hours. The drug was administered in 10-grain doses, most commonly at intervals of eight hours. The result of this treatment in the few cases in which it was tried was unsatisfactory, and the treatment was discontinued. At the suggestion, however, of Dr. Begg, of Bath, communicated through Dr. Chalmers, Medical Officer of Health for Glasgow, a series of more careful observations was instituted, with the object of discovering what influence, if any, salol exercises on the course of the disease. Dr. Begg suggested in his letter that the doses used were possibly too small, and pointed out that 60 grains of salol should be administered daily to each patient. To obviate this objection, salol was administered to each patient under observation, with one or two exceptions, in doses of 10 grains, given at intervals of three hours, so that each patient received a daily dose of 80 grains. That the salol was thoroughly absorbed was evident from the strong smell of the drug given off by the patients, which, in some cases, was sufficiently powerful to practically destroy the characteristic odour of small-pox. In a certain proportion of cases, the drug communicated to the urine the characteristic dark-green colour seen in cases of carboluria.

The action of the drug was observed in 77 cases, of whom 55 were male and 22 female, their ages ranging between 3 and 67 years. The treatment was commenced as soon as the patient was admitted to the ward, and was continued till the pustular stage had passed or the eruption aborted. In some cases, however, the treatment was continued until the patient was sufficiently convalescent to leave his bed.

Of the total cases treated, 13 (or 16·8 per cent) died; but it is only fair to state, however, that the drug was administered principally in cases of great or considerable severity, as it was thought that its action could be better estimated in such cases than in those of a milder character. In this connection, it may be stated that in only 12 out of the total number was the eruption sparse. In 35 of the discrete cases the eruption was abundant, and in 10 very abundant, while 20 were confluent. There were no hæmorrhagic cases observed. With regard to vaccination, 7 were altogether unvaccinated: in 1 the vaccination was "doubtful"—that is to say, a history of primary vaccination was given by the patient or his guardian, but no evidence in the shape of a vaccinal scar could be discovered; in 69 of the cases there was evidence of successful primary vaccination. One patient, æt. 36, had been revaccinated when 8 years of age.

If we estimate the influence of the treatment by noting the course of the eruption, it will be found that in 74 out of the 77 cases the eruption seemed to be in no way influenced by the action of the salol, as in all these cases it ran through its various stages, including the pustular stage, without modification. In only 3 was there anything like a marked modification of the eruption; in 2 of these the eruption did not run a full course, desiccation commencing during the vesicular stage, while in the third case it occurred early on the face and head, but did not commence on other parts of the body till the pustular stage had set in.

The action of the drug under consideration will be most satisfactorily studied in the unvaccinated cases, seeing that these are free from those fallacies incident to the partial immunity commonly found in persons who have been primarily vaccinated, and it may be as well to give a short report of each of these 7 cases in which the action of the drug was observed.

The first of these was that of Wm. M'B., æt. 20, unvaccinated, who was admitted to hospital on 24th March, 1901, that being his eighth day of illness.

On admission, the face, forehead, and scalp presented a confluent vesicular eruption; on other parts of the body the eruption was very abundant, but less advanced in its development than that on the face and scalp, the eruption on the legs being papulo-vesicular. There was an abundant vesicular eruption on the palate and fauces. The tongue was clean and moist. Temperature on admission, 98·6°; pulse, 84; respirations, 20. Physical examination of the lungs revealed a few sibilant râles over the bases posteriorly. The heart was normal. The urine contained a considerable amount of albumen, but no blood.

27th March (eleventh day of illness).—On this date the eruption on the face and forehead had become completely confluent, and the eruption was pustular over the whole body; the amount of albumen was rather less than on admission. The temperature from the time of admission ranged from 98·6° to 102° F., pulse from 84 to 112, and respiration from 20 to 30 per minute.

29th March (thirteenth day of illness).—Crusting on this date was pretty abundant over forehead, face, and scalp, but the crusts were moist and soft. On other parts of the body the eruption had become highly pustular, each pustule being surrounded by a very marked inflammatory zone. The discharge from the desiccating pustules was extremely offensive in spite of careful local antiseptic treatment. The albumen in the urine had greatly increased in amount, but there was no blood present. The temperature rose to 102·6° F., the pulse to 136, and the respirations to 32 per minute respectively.

30th March (fourteenth day of illness).—Since last note the patient had become very restless and refused nourishment. His pulse was weak, soft, and irregular; temperature, 105° F. He died at 8 P.M.

In this case the administration of salol commenced on the eleventh day of illness, so that this test of the influence of the drug upon the development of the eruption can scarcely be considered a fair one, seeing that the eruption on the face was already in a pustular condition, still we might have expected some action upon the skin, but that no action of any kind occurred was evident from the fact that the eruption on the thirteenth day of illness (*i.e.*, on the third day after the commencement of the treatment by salol) was exceedingly offensive over the upper part of the body.

In this case 80 grains of salol were given daily from the eleventh day of illness till the patient's death on the fourteenth day.

The second case was that of Wm. M., æt. 6, unvaccinated, who was admitted to hospital on 25th March, 1901, that being his seventh day of illness.

On admission, his temperature was 99° F.; pulse, 100; respirations, 24 per minute.

The eruption on face and head was semi-confluent, and just commencing to vesiculate. On the trunk the eruption was sparse, while on the limbs it was very copious. On the lower part of the body the eruption was less advanced than elsewhere. On the palate the eruption was abundant, tongue clean. Heart, lungs, and abdominal organs presented nothing noteworthy. The urine was free from albumen.

31st March (thirteenth day of illness).—From the time of admission till this date the eruption had developed steadily, and was now frankly pustular over the whole body, and showing signs of commencing desiccation on the face. From this date onwards the eruption gradually crusted over the whole body, and the child was ultimately dismissed well.

It is perhaps worth noting that the mother stated that three attempts had been made to vaccinate this patient in infancy, but without success. Salol was first administered in this case on the thirteenth day of illness in does of 4 grains every three hours. The test in this case is open to the objection that the salol was administered too late in the disease for any influence on the eruption to show itself.

The third case was that of J. M'C., æt. 46, unvaccinated. The patient took ill with the usual symptoms on 25th March, 1901, and the eruption appeared on the 28th. When admitted on 30th March, 1901, there was present on the face a very abundant, and in part semi-confluent, characteristic small-pox eruption in an early vesicular stage. On the limbs the rash was also very abundant, but less so than on the face, and in an earlier stage of development. On the trunk the eruption was more sparse than elsewhere.

There was nothing noteworthy in the case beyond the facts just stated. Temperature on admission, 103° F.; pulse, 132; respirations, 28.

The eruption ran the usual course seen in unvaccinated persons, passing through a typical vesicular and pustular stage, neither of these showing the slightest sign of modification. Towards the latter part of the acute stage the eruption became very septic, and continued so in parts till the crusting stage was at an end, patient's temperature remaining febrile till the forty-second day.

During the latter part of the stage of desiccation the skin condition became complicated by the presence of boils and small abscesses.

In this case salol was administered in doses of 10 grains every three hours from day of admission till convalescence was established. It is to be noted in connection with the treatment in this case that the pustular stage was in no way modified, that the eruption became septic, and, lastly, that pus formation in the skin was present to a considerable extent as indicated by the occurrence of boils and small abscesses.

The case of R. C., æt. 23, unvaccinated, forms the fourth in the series observed in unvaccinated persons. This patient took ill with the usual febrile symptoms on 21st April, 1901. The eruption appeared on the third day. On admission (23rd April, 1901), the face and forehead were covered with a confluent small-pox eruption in an early papular stage. On trunk and extremities the eruption was just appearing. The palate presented a moderately abundant eruption of early papules, and along with the fauces was vividly congested. There was nothing unusual found on physical examination either in chest or abdomen. Temperature on admission, 102·4° F.; pulse, 100; respiration, 26.

This patient died on the eleventh day of illness, the eruption having passed through all the usual stages without the slightest modification. The eruption in the pustular stage became very septic and offensive in spite of careful attention to the skin. The pulse for some days before death was soft and irregular, and was associated with other signs of cardiac failure.

In this case, salol was administered, from the day of admission till his death on the ninth day after admission to hospital, in doses of 10 grains at intervals of three hours.

It should be noted specially that the eruption here ran a quite unmodified course, that the pustular stage was well developed at the time of death, and that the eruption became very septic.

The fifth case in unvaccinated persons was that of B. M'A., æt. 4½ years, who was said to have taken ill with the usual symptoms on 1st April, 1901, the eruption appearing, according to the statement of the parents, several days later. On admission to hospital on April 9th, the temperature was 99° F.; pulse, 124; respiration, 28.

The eruption on the face and arms was discrete but very abundant, and was in the vesicular stage. Elsewhere, the eruption was less abundant and not so advanced. There was nothing found on physical examination in any of the internal organs; the urine was normal.

In this case, the eruption passed through the usual stages, the pustules desiccating in the usual way. Patient was dismissed well on the sixth week after sickening.

Salol was administered to this patient in three-hourly doses of 3 grains each, from the date of admission till convalescence was fully established.

It is to be noted that in this case the eruption passed through the pustular stage in the usual way, and that, owing to the abundance of crusts and depth of scarring, convalescence was delayed beyond the usual time.

The sixth case in the series was that of J. A., æt. 3 years, who was admitted on 28th February, 1902, on her sixth day of illness. The eruption on face was very profuse, and in places semi-confluent, especially around the nostrils and on the chin. On the arms, the eruption was mostly discrete, and in an early vesicular stage. On the trunk, the eruption was abundant, more so on the back than on the chest; it was here quite discrete and in an early vesicular stage. On the legs, the eruption was abundant, mostly vesicular, but an occasional papule was seen amongst the vesicles. The feet were swollen, and the eyes were closed by œdema. In the mouth, fauces, and under the tongue the eruption was very abundant. The organs generally were normal, and there was no albuminuria. Temperature, 100·6° F.; pulse, 130; respiration, 28.

Salol was administered in doses of 4 grains every three hours from day of admission till her death on twelfth day of illness.

In this case, the eruption ran the usual unmodified course, though it showed signs of drying in shortly before death, a condition occasionally seen when heart failure begins to tell.

In this case, it is to be observed that 32 grains of salol were administered daily without producing any appreciable modification on the course of the disease.

The last of the unvaccinated cases to be quoted is that of R. C., æt. 30, who was admitted on 3rd March, 1902, on his fourth day of illness. The eruption was an unusually sparse one for an unvaccinated person, and was about equally distributed over the surface. On the face, the eruption was in an early papulo-vesicular stage, while it was early papular on the lower extremities; there were traces of a fading erythematous prodrome. The throat was catarrhal and painful, but presented little or no eruption. Temperature, 101·8° F.; pulse, 104; respiration, 22.

On the day after admission, the eruption on the fauces and pharynx had considerably increased in amount, and the patient was very husky. The urine contained a trace of albumen. The eruption in this case passed through the usual stages, desiccation occurring with the formation of crusts, complete convalescence being established later.

In this case, 30 grains of salol were administered from the date of admission till convalescence was established without exercising any modifying influence on the course of the eruption.

If we exclude Case 2, where salol was administered much too late for us to expect any influence on the course or character of the eruption, it is clear that the treatment had absolutely no influence on the character, course, or termination of any of the cases. The eruption in each passed through all the usual phases, and in every case presented a well-marked pustular stage. In three of the cases, the eruption became very septic, the discharge from the skin being very foul in spite of the utmost care and of local treatment by means of antiseptic applications. In one, boils and abscesses developed and greatly retarded the patient's convalescence.

It is evident, therefore, that in these unvaccinated persons pus formation was in no way hindered by the internal treatment.

Salol was administered in one case whose vaccination was doubtful, and, as it showed no indication, as far as could be judged, of even partial immunity, it may be quoted here.

J. B., æt. 20. This patient did not know whether he had been vaccinated in infancy or not, but the most careful examination failed to discover any evidence of a vaccinal scar. The patient took ill on 10th April, 1901, with the usual prodromal symptoms, and was admitted to hospital five days later. When admitted on 14th April, 1901, a fairly abundant and quite characteristic eruption of small-pox papules was found on the face and forehead. These were just appearing when the patient was first seen, and later became more abundant, extending over the trunk and limbs in the usual manner. Physical examination of the thoracic and abdominal organs failed to reveal anything noteworthy. The urine was normal. Temperature on admission, 99·4° F.

The eruption in this case gradually developed, and in due course passed through a vesicular and unmodified pustular stage. Crusting took place in the usual manner, the crusts separating and epidermis desquamating quite typically. The secondary fever did not completely disappear till the evening of the seventeenth day.

In this case, salol was administered in 10 grain doses, at intervals of three hours, from the date of admission till convalescence was established.

In this case, the treatment was begun as early as it could be in any case of small-pox, but, in spite of this early administration of the drug, the eruption ran a full course, the pustular stage being in no way modified.

As already stated, 69 of the patients to whom salol was administered presented evidence of successful primary vaccination, and one of these cases had been revaccinated at the age of 8. Of the 68 cases primarily vaccinated only, we shall select three or four in which the drug was administered from the earliest period of the eruption, arranging the others in tabular form along with those quoted in detail.

The first of these cases is that of M. G., æt. 24, who was admitted to hospital on 13th April, 1901, on his third day of illness. This patient presented one vaccinal scar, the result of primary vaccination, which measured 0·15 sq. inch. The prodromal symptoms were of moderate severity.

The eruption, which patient stated had first appeared on the second day of illness, consisted of abundant papules in a very early stage. On the face and forehead these were very abundant, but not confluent, and there was a similarly abundant, but less developed, rash on the limbs and back, while on the front of the trunk the eruption was sparsely scattered. The fauces and palate were markedly catarrhal, and presented an abundant eruption of papules. There was nothing noteworthy found in any of the internal organs. Temperature on admission, 102·6° F. The urine was normal.

In this case, the eruption passed through the usual stages, none of them being in any degree modified. The pustules matured in the usual manner seen in unmodified small-pox, and formed large crusts. In the course of convalescence, patient suffered severely from a very abundant crop of boils and small superficial abscesses. The convalescence was prolonged, and patient did not leave hospital till the end of the ninth week. Salol was begun immediately on admission, and, while early papules were still appearing, the usual dose —*i.e.*, 10 grains every three hours—was given and continued till the crusting stage had passed.

In spite of the large doses of salol which were kept up continuously, it should be noted that the eruption passed through all its stages, the pustular stage being very typical.

Boils and abscesses in considerable numbers retarded the convalescence, so that, in this case as in the others, pus formation was in no way influenced by the drug.

A case similar to the last quoted was that of M. Q., æt. 39, who was admitted to hospital on 24th April, 1901, on his fourth day of illness. This patient had been vaccinated in infancy, and presented one vaccinal scar which measured 0·39 sq. inch. The prodromal symptoms of fever were of the usual kind, and patient stated that the eruption was first noticed on the day before admission to hospital. The eruption on admission consisted of well-formed papules, very abundantly set on the face and likewise abundantly distributed over the back and limbs. The palate and fauces were congested, and presented an abundant eruption of small papules. Nothing abnormal was found on physical examination in either chest or abdomen. Temperature on admission, 99° F.; pulse, 80; respiration, 20 per minute. The urine contained a trace of albumen.

In this case, the eruption developed normally, the pustules being unmodified and well developed. The urine contained albumen at intervals, and blood was present between the thirtieth and thirty-fifth days. Numerous boils and small superficial abscesses marked the course of convalescence. Salol was administered to this patient in the usual dose of 80 grains every twenty-four hours.

In this case, as in the others, it is notable that the pustular stage remained unmodified, and that abscesses and boils so protracted his convalescence that his residence in hospital extended over a period of nearly ten weeks.

A similar history and course were presented by the case of A. C., æt. 45, who was admitted to hospital on 2nd April—the fifth day of illness.

The prodromal symptoms in this case presented nothing unusual, and the eruption was first noticed on the day previous to admission. When first seen, there was a very abundant, and, in parts, confluent eruption of small, irregularly-shaped but characteristic papules on the face and forehead, while a similar eruption, exceedingly abundant but not confluent, was present on the patient's arms, back, and legs. The papular eruption in the throat was likewise abundant, and the mucous membrane was highly congested. There was nothing unusual in any of the organs. Temperature on admission, 101·4° F. The urine was normal.

The eruption in this case passed through the usual stages, the pustular stage being quite unmodified. Towards the end of the pustular stage, the skin became highly septic in spite of every attention, and patient died on the fourteenth day of his illness.

This patient received 10 grains of salol every three hours, from the date of admission to hospital till his death, but it seemed to exercise no influence whatever on the development of the rash.

As already stated, the eruption, in three of the cases treated with salol, ran a modified course, and in a fourth the eruption on the face was modified, while on other parts of the body the eruption pursued its usual course.

The first of these cases was that of P. J., a girl, aged 14, who was admitted to hospital on 25th March, 1901. This patient had two well-defined, foveated, primary vaccination scars measuring 0·12 and 0·08 sq. inch. She had also been successfully revaccinated on 19th March—the fourth day prior to the appearance of her initial symptoms, which first appeared on 22nd March. When admitted to hospital on the 25th—her fourth day of illness—she presented on the face a moderately abundant discrete papular small-pox rash. On the extremities, the eruption was moderately abundant, but very sparse on the front of the trunk, which was the seat of a fading prodromal erythema. The throat likewise presented a moderate eruption of papules. There was nothing discoverable on physical examination in any of the internal organs. Temperature on admission, 101·8° F.; pulse, 108; respiration, 24 per minute. The urine was normal.

The greater part of the eruption in this case passed through the papular and earlier vesicular stages only, while part, especially in the legs, formed very decided and fully developed pustules. The modified eruption was present mostly on the face, trunk, and arms. The urine became dark coloured after the administration of salol commenced, and continued so till its exhibition was stopped. Salol was administered to this patient in doses of 4 grains every three hours during the first three days, when the dose was increased to 10 grains every three hours.

In considering the influence of salol upon the course of the disease in the present case, we must remember that the patient was only 14 years of age, and that her vaccination scars indicated that she probably still enjoyed a certain amount of immunity. That this immunity was not complete was evident from the fact that a proportion of the rash ran an unmodified course. This course is very commonly followed by the rash in small-pox in young patients who have been moderately well vaccinated.

A second case of a somewhat similar kind was that of H. K., a girl, aged 11 years. Her primary vaccination scar measured 0·39 sq. inch, was well foveated, but ill-defined in margins. She had not been revaccinated.

Her illness commenced on 21st of March, 1901, with the usual febrile symptoms, and the eruption appeared on the 24th.

On admission to hospital on 25th March, her fifth day of illness, her temperature was 98·4° F.; pulse, 98; and respirations, 24. The face and head presented a moderately abundant, but discrete eruption, while the limbs showed a less abundant eruption than elsewhere. The eruption on face and forehead was distinctly vesicular. There was nothing discovered in the internal organs except a few râles over the bases of the lungs behind.

The eruption in this case did not run a full course, as crusting began early in the pustular stage, and before maturation was complete. Salol was given to this patient in doses of 4 grains every three hours from the time of admission till convalesence was established.

In this case, the age of the patient and her tolerably satisfactory primary vaccination must be borne in mind, and it should also be noted that the dose of salol administered in this particular case was comparatively small.

A third case, and one which is more striking than either of those just quoted, is that of L. S., a woman, 32 years of age. She presented on the right arm two non-foveated primary vaccination scars, measuring respectively 0·2 sq. inch and 0·1 sq. inch. Her illness commenced on 2nd April with the usual symptoms, and the eruption appeared on 5th April.

On admission on 6th April, her fifth day of illness, her temperature was 100° F.; pulse, 120; respirations, 24 per minute. The eruption was very abundant all over the body, and in the right groin could be seen the remains of a prodromal rash. The eruption was largely papular, but showed signs of distinct vesiculation over a considerable surface. The papules and vesicles were small. There was nothing abnormal discovered in any of the internal organs. The urine contained albumen, and gave the guaiacum reaction for hæmoglobin, but this was probably due to the fact that the patient was menstruating, as it disappeared with the menstrual flow.

In this case the eruption did not run a full course, as it commenced to dry up at the end of the vesicular stage. There was no pustulation, and practically no crusting, the epidermis desquamating mostly in small flakes.

In this case 10 grains of salol were given every three hours till desiccation was complete.

It is to be observed that the eruption was late in appearing, an indication in most cases of a modified or comparatively mild attack of small-pox, and that the primary vaccination scars were of fair size, and indicated a considerable degree of immunity, at least in childhood, which might reasonably enough be continued in a less degree into adult life.

The three cases just quoted, in all of which the eruption was abundant, furnish examples of conditions very apt to mislead those who are not familiar with the clinical aspects of small-pox as studied in vaccinated persons; but the frequency with which vaccinated patients who have not been treated except as regards special symptoms pass through a precisely similar course leaves do doubt that these abortive conditions must be attributed to the prophylactic influence of vaccination, and not curative treatment.

As already stated, in selecting the cases to be treated with salol, an effort was made to exhibit the drug in such patients only as were suffering from a severe or moderately severe attack, excluding cases of a milder character which were certain to run a benign course.

In all cases the drug was given in doses as large as the patient could conveniently take.

Salol is said to have proved of great service in the hands of some observers, and Dr. Charles Begg, of Bath, is especially impressed with the efficacy of the drug in all cases of small-pox. In a letter, written in May, 1901, to Dr. A. K. Chalmers, he says, "Personally I never saw any more striking result from any drug in any case than the action of salol in small-pox in China, and it is difficult to believe that climate or type can make such a difference as to render the drug useless, especially as it has succeeded in England. I am quite satisfied that the process of maturation and its secondary fever has nothing whatever to do with small-pox, and it seems but reasonable to believe that the process can be arrested just as in any other suppuration."

Unfortunately, the only conclusion that can be come to on studying the results of the salol treatment as carried out at Belvidere is that the drug is absolutely useless, and that the convictions of Dr. Begg have not been confirmed. Taking the first series of 7 unvaccinated cases, we find that of these 3 died, giving approximately the usual case mortality seen in Belvidere among unvaccinated persons.

On examining the list of 69 vaccinated cases, we find that among these there were 10 deaths, giving a case mortality of 14·4 per cent, or about 50 per cent higher than that seen over all vaccinated persons admitted to the small-pox hospital in Glasgow during the recent outbreak. This higher death-rate is, of course, due to the fact that only the more severe types of cases were treated with salol.

But not only was the case mortality uninfluenced by the treatment, but the severity of the attack likewise seemed to be unaffected, for out of the 69 vaccinated cases treated, 20 were confluent, giving a percentage of 28·9, or about 48 per cent higher than was found among vaccinated cases of all grades of severity during the recent epidemic. Of course, the severity of the attack is apparently determined by the susceptibility of the patient, which we could not expect would be modified by any drug. Yet the abundance of the eruption seemed in no way modified even in those cases where the drug was administered from the earliest possible date at which the disease could be recognised with certainty.

Further, the course followed by the eruption, as well as the complications and sequelæ, were precisely those with which we are familiar among small-pox patients who are subjected to no kind of special treatment. The stage of maturation was passed through in almost every case, and in some the eruption became virulently septic. Boils, abscesses, and other limited suppurative complications occurred in the usual proportion of cases, and, in point of fact, pus formation was in no way hindered or apparently limited.

Even supposing it is true that salol has a power of preventing the pus formation resulting from the presence of pyogenic

SUMMARY OF CASES OF SMALL-P

No.	Age.	Sex.	Condition as to Vaccination.	Date of onset of Illness.	Date of appearance of Eruption.	Day of Illness.	Character of Eruption.
1	26	F.	Vaccinated.	Mar. 23.	Mar. 26.	4th.	Discrete—abundant.
2	20	M.	Unvaccinated.	,, 17.	,, 19.	8th.	Confluent.
3	6	M.	,,	,, 19.	,, 21.	7th.	,,
4	14	F.	Vaccinated.	?	?	?	Discrete—sparse.
5	11	F.	,,	Mar. 21.	Mar. 24.	5th.	,, abundant.
6	46	F.	,,	,, 21.	,, 24.	5th.	,, ,,
7	45	M.	,,	,, 19.	,, 21.	3rd.	Confluent.
8	40	M.	,,	,, 20.	,, 23.	6th.	Discrete—very abundant.
9	36	M.	,, (Revaccinated at age of 8.)	,, 22.	,, 24.	5th.	,, ,,
10	25	M.	Vaccinated.	,, 23.	,, 25.	4th.	Confluent.
11	34	M.	,,	Apr. 4.	Apr. 6.	5th.	,,
12	39	M.	,,	,, 21.	,, 23.	4th.	,,
13	29	M.	,,	Mar. 30.	,, 1.	5th.	,,
14	46	M.	,,	,, 29.	Mar. 31.	5th.	,,
15	56	M.	,,	,, 29.	Apr. 1.	6th.	,,
16	37	M.	,,	Apr. 5.	,, 7.	2nd.	Discrete—very abundant.
17	46	M.	,,	,, 3.	,, 5.	7th.	Confluent.
18	43	M.	,,	,, 4.	,, 8.	7th.	Discrete—abundant.
19	56	M.	,,	,, 9.	,, 11.	5th.	Confluent.
20	20	M.	Doubtful.	,, 10.	,, 14.	5th.	Discrete—abundant.
21	36	M.	Vaccinated.	,, 6.	,, 8.	5th.	,, ,,
22	17	M.	,,	,, 7.	,, 10.	4th.	,, ,,
23	31	M.	,,	,, 4.	,, 6.	3rd.	,, ,,
24	29	M.	,,	,, 1.	,, 5.	7th.	,, sparse.
25	31	M.	,,	,, 1.	,, 5.	8th.	,, ,,
26	29	M.	,,	,, 5.	,, 7.	5th.	,, ,,
27	33	M.	,,	,, 7.	,, 11.	5th.	,, ,,
28	27	M.	,,	,, 8.	,, 10.	4th.	Confluent.
29	46	M.	Unvaccinated.	Mar. 25.	Mar. 28.	6th.	,,
30	28	M.	Vaccinated.	,, 25.	,, 28.	6th.	,,
31	33	M.	,,	,, 27.	Apr. 1.	6th.	Discrete—abundant.
32	53	M.	,,	Apr. 1.	,, 4.	6th.	Confluent.
33	22	M.	,,	,, 4.	,, 7.	4th.	,,
34	48	M.	,,	,, 4.	,, 7.	5th.	,,
35	23	M.	,,	,, 12.	,, 15.	4th.	Discrete—abundant.
36	31	M.	,,	,, 11.	,, 15.	6th.	,, very abundant.
37	23	M.	Unvaccinated.	,, 21.	,, 23.	3rd.	Confluent.
38	31	M.	Vaccinated.	Mar. 27.	Mar. 30.	4th.	Discrete—abundant.

EATED WITH SALOL.

Date of administration of Salol.		Dose of Salol administered.	Course of Eruption.	Complications.	Result.
Mar.	26.	10 grs. every 3 hrs.	Ran full course.	...	Dismissed well.
,,	27.	10 ,, ,,	,,	Albuminuria.	Died.
,,	31.	4 ,, ,,	,,	...	Dismissed well.
,,	28.	4 ,, ,,	Aborted.	...	,,
,,	25.	4 ,, ,,	,,	...	,,
,,	25.	10 ,, ,,	Ran full course.	...	,,
,,	22.	10 ,, ,,	,,	...	Died.
,,	25.	10 ,, ,,	,,	...	Dismissed well.
,,	27.	10 ,, ,,	,,	...	,,
,,	26.	10 ,, ,,	,,	...	,,
Apr.	10.	10 ,, ,,	,,	...	Died.
,,	24.	10 ,, ,,	,,	Albuminuria; abscesses in leg; boils on neck and chest.	Dismissed well.
,,	9.	10 ,, ,,	,,	Abscesses in legs.	,,
,,	2.	10 ,, ,,	,,	Eruption became septic.	Died.
,,	3.	10 ,, ,,	,,	...	,,
,,	6.	10 ,, ,,	,,	...	Dismissed well.
,,	9.	10 ,, ,,	,,	...	,,
,,	10.	10 ,, ,,	,,	...	,,
,,	13.	10 ,, ,,	,,	...	Died.
,,	14.	10 ,, ,,	,,	...	Dismissed well.
,,	10.	10 ,, ,,	,,	...	,,
,,	10.	10 ,, ,,	,,	...	,,
,,	6.	10 ,, ,,	,, (except on face).	...	,,
,,	7.	10 ,, ,,	Ran full course.	...	,,
,,	8.	10 ,, ,,	,,	...	,,
,,	9.	10 ,, ,,	,,	...	,,
,,	11.	10 ,, ,,	,,	...	,,
,,	11.	10 ,, ,,	,,	...	Died.
Mar.	30.	10 ,, ,,	,,	Eruption became septic.	Dismissed well.
,,	30.	10 ,, ,,	,,	...	,,
Apr.	1.	10 ,, ,,	,,	...	,,
,,	6.	10 ,, ,,	,,	...	,,
,,	7.	10 ,, ,,	,,	...	Died.
,,	8.	10 ,, ,,	,,	...	Dismissed well.
,,	15.	10 ,, ,,	,,	...	,,
,,	16.	10 ,, ,,	,,	...	,,
,,	23.	10 ,, ,,	,,	Eruption became septic.	Died.
Mar.	30	10 ,, ,,	,,	Boils and abscesses.	Dismissed well.

SUMMARY OF CASES OF SMALL-PO

No.	Age.	Sex.	Condition as to Vaccination.	Date of onset of Illness.	Date of Appearance of Eruption.	Day of Illness.	Character of Eruption.
39	47	M.	Vaccinated.	Mar. 26.	Mar. 30.	6th.	Confluent.
40	42	M.	,,	Apr. 1.	Apr. 4.	4th.	Discrete—abundant.
41	24	M.	,,	,, 11.	,, 13.	3rd.	,, ,,
42	24	M.	,,	,, 18.	,, 21.	5th.	,, ,,
43	53	F.	,,	,, 10.	,, 14.	7th.	,, ,,
44	32	F.	,,	,, 12.	,, 14.	5th.	,, ,,
45	40	F.	,,	Mar. 31.	,, 2.	4th.	,, ,,
46	38	F.	,,	,, 27.	Mar. 29.	8th.	,, sparse.
47	32	F.	,,	Apr. 2.	Apr. 5.	5th.	,, very abundant.
48	67	F.	,,	,, 4.	,, 8.	5th.	,, sparse.
49	4½	F.	Unvaccinated.	,, 1.	,, 3.	9th.	,, abundant.
50	26	F.	Vaccinated.	,, 7.	,, 11.	6th.	,, sparse.
51	17	F.	,,	,, 21.	,, 24.	6th.	,, abundant.
52	24	F.	,,	Feb. 23.	Feb. 26.	6th.	,, ,,
53	3	F.	Unvaccinated.	,, 23.	,, 26.	6th.	,, ,,
54	30	M.	,,	,, 28.	Mar. 2.	4th.	,, sparse.
55	30	F.	Vaccinated.	Mar. 2.	,, 5.	4th.	,, very abundant.
56	32	F.	,,	,, 3.	,, 5.	3rd.	,, sparse.
57	53	F.	,,	,, 1.	,, 4.	6th.	,, very abundant.
58	28	F.	,,	,, 2.	,, 5.	4th.	,, ,,
59	52	M.	Vaccinated.	,, 3.	,, 6.	5th.	Confluent.
60	30	M.	,,	Feb. 27.	,, 3.	9th.	Discrete—sparse.
61	63	M.	,,	Mar. 3.	,, 7.	5th.	,, very abundant.
62	66	M.	,,	,, 4.	,, 6.	4th.	,, abundant.
63	36	M.	,,	,, 4.	,, 7.	4th.	,, ,,
64	23	M.	,,	,, 4.	,, 5.	2nd.	,, ,,
65	9	F.	,,	,, 6.	,, 8.	6th.	,, ,,
66	36	F.	,,	,, 5.	,, 9.	6th.	,, ,,
67	25	M.	,,	,, 9.	,, 11.	4th.	,, very abundant.
68	36	M.	,,	,, 7.	,, 11.	6th.	,, abundant.
69	31	F.	,,	,, 12.	,, 16.	6th.	,, ,,
70	50	M.	,,	,, 15.	,, 18.	5th.	,, ,,
71	28	M.	,,	,, 29.	Apr. 1.	4th.	,, ,,
72	29	M.	,,	,, 22.	Mar. 25.	4th.	,, ,,
73	35	M.	,,	,, 24.	,, 25.	6th.	,, ,,
74	38	M.	,,	,, 24.	,, 27.	5th.	,, ,,
75	36	M.	,,	,, 25.	,, 29.	5th.	,, ,,
76	36	M.	,,	,, 26.	,, 29.	7th.	,, sparse.
77	30	M.	,,	Apr. 13.	Apr. 15.	6th.	,, abundant.

TREATED WITH SALOL (*continued*).

Date of administration of Salol.	Dose of Salol administered.	Course of Eruption.	Complications.	Result.
Mar. 31.	10 grs. every 3 hrs.	Ran full course.	Ulceration of corneæ.	Dismissed well.
Apr. 4.	10 ,, ,,	,,	...	,,
,, 13.	10 ,, ,,	,,	Boils and abscesses.	,,
,, 23.	10 ,, ,,	,,	...	Dismissed well.
,, 16.	10 ,, ,,	,,	...	Died.
,, 16.	10 ,, ,,	,,	...	Dismissed well.
,, 3.	10 ,, ,,	,,	Albuminuria.	,,
,, 3.	10 ,, ,,	,,	..	,,
,, 6.	10 ,, ,,	Aborted.	Albuminuria.	,,
,, 8.	10 ,, ,,	Ran full course.	...	,,
,, 9.	4 ,, ,,	,,	...	,,
,, 12.	10 ,, ,,	,,	...	,,
,, 26.	10 ,, ,,	,,	...	,,
Feb. 28.	10 ,, ,,	,,	Abscesses.	,,
,, 28.	4 ,, ,,	,,	...	Died.
Mar. 4.	10 ,, ,,	,,	...	Dismissed well.
,, 6.	10 ,, ,,	,,	Corneal ulcer.	,,
,, 6.	10 ,, ,,	,,	...	,,
,, 7.	10 ,, ,,	,,	Albuminuria.	,,
,, 6.	10 ,, ,,	,,	Corneal ulcer.	,,
,, 8.	10 ,, ,,	,,	Albuminuria.	Died.
,, 8.	10 ,, ,,	,,	...	Dismissed well.
,, 8.	10 ,, ,,	,,	Albuminuria.	,,
,, 8.	10 ,, ,,	,,	...	,,
,, 8.	10 ,, ,,	,,	...	,,
,, 6.	10 ,, ,,	,,	...	,,
,, 12.	4 ,, ,,	,,	Abscesses.	,,
,, 11.	10 ,, ,,	,,	...	,,
,, 13.	10 ,, ,,	,,	...	,,
,, 13.	10 ,, ,,	,,	Purulent conjunctivitis.	
,, 18.	10 ,, ,,	,,	...	,,
,, 20.	10 ,, ,,	,,	...	,,
Apr. 2.	10 ,, ,,	,,	...	,,
Mar. 26.	10 ,, ,,	,,	...	,,
,, 30.	10 ,, ,,	,,	...	,,
,, 29.	10 ,, ,,	,,	...	,,
,, 30.	10 ,, ,,	,,	...	,,
Apr. 2.	10 ,, ,,	,,	...	,,
,, 19.	10 ,, ,,	,,	...	Died.

organisms, it does not follow that the drug will prevent the development of the stage of maturation, for if there is one fact in the pathology of the small-pox pustule more certain than another, it is that the so-called pustule is no pustule in the stricter sense of the term, and that in the majority of cases pyogenic micro-organisms, both in cultures and in properly prepared sections, are conspicuous by their absence. In many cases of severe secondary fever the so-called pustules contain practically nothing but lymphocytes, and show a complete absence of the polymorphonuclear corpuscles usually produced by pyogenic organisms.

It is difficult to believe that racial or climatic differences would modify the action of salol in small-pox, though, of course, this is just possible, but the satisfactory action of salol in China may be reconciled with its unsatisfactory action in the cases observed in Belvidere hospital, if we remember that there is in the East a disease which has been and is now being confused with true small-pox on account of its superficial resemblance to that disease.[1]

CÆSAREAN SECTION—WITH NOTES OF A SERIES OF NINE SUCCESSFUL CASES.[2]

By J. M. MUNRO KERR, M.B., C.M., F.F.P.S.G.,

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On looking over the record of the subjects which have been brought under the notice of this Society, and the papers which have been read to it, I find Cæsarean section has only once been considered. That occasion was many years ago. As a matter of fact, it was in Session 1890-91 when Professor M. Cameron brought under the notice of the Society the brilliant results he was obtaining from the operation.

This is surely unfortunate, for here in Glasgow the operation has been performed oftener than in any other city of the

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[1] "Observations on an Infectious Disease in Lascars having close relations with Variola and Varicella," by R. S. Thomson, D.Sc., M.D., C.M.Glasg., and John Brownlee, M.A., M.D.Glasg., D.P.H.Camb., *Lancet*, 22nd October, 1898.

[2] Read at a meeting of the Glasgow Obstetrical and Gynæcological Society held on 26th February, 1902.

British Empire. Last year in the Maternity Hospital alone it was performed on nineteen occasions.

My purpose in this short paper is, first of all, to detail briefly the cases on which I have operated, and afterwards to discuss some of the points connected with the operation, in the hope that to-night or at an early date others will give their experiences.

CASE I.—Mrs. L., 33, iii-para, was admitted to the Maternity Hospital under my care on 15th March, 1901. In each of her two previous labours craniotomy had to be performed before the child could be extracted.

On examination, the os was fully dilated, and the membranes were ruptured. The oblique conjugata was found to be 3¾ inches, and the transverse diameters were slightly under the normal. The presenting head was freely movable above the brim, although labour had been in progress for twenty-four hours. The fœtal heart-sounds were strong, regular, and numbered 140 per minute.

The operation was carried out by making the usual longitudinal incision through the abdominal wall and anterior uterine wall. The child was easily extracted by the head, but in doing this the lower end of the wound was increased by slight tearing of the lower uterine segment. The child, a female, cried lustily soon after it birth. It weighed 7 lb., and measured 19 inches. The placenta, which was situated on the posterior wall of the uterus, became immediately separated, and was easily removed along with the membranes. The woman was sterilised by tying the tubes in two places and dividing them between the ligatures. The uterine wound was closed with silk. The abdominal wound was closed in one layer with silkworm-gut.

The puerperium was very satisfactory, and the woman's progress to recovery rapid after the first few days. The temperature never rose above the normal, except the morning after the operation, when it registered 100°. The pulse, however, for the first few days was very rapid, and gave cause for considerable anxiety. On the evening of the second day it registered as much as 160, but fell on the third day to 108. This rapid rate was attributed to a very bad bronchitis which developed immediately after the operation, and was caused, I feel sure, by the irritating fumes of chloroform and gas. The stitches were removed on the fourteenth day, at the first dressing, when the wound was found quite dry and healed.

The woman was dismissed on the thirty-fourth day, both she and the child being perfectly well. She began to nurse the child on the tenth day after she had recovered from the bronchitis, and continued doing so until she left the hospital.

Note on Case.—The most striking feature in this case was the alarming bronchitis which developed after the operation, and which, I think, was correctly attributed to the irritating fumes of the chlorine set free by the coal gas, the only illuminant we have in the hospital. I have seen the same complication occur once or twice before in cases operated on during the night, but never in such a severe form. The woman was really extremely ill.

CASE II.—S. C., primipara, 23 (?), was admitted to the Maternity Hospital under my care on 19th April, 1901. On examination, the os was found fairly well dilated, and the membranes unruptured. The C.D. measured 3¼ inches. As the fœtal heart-sounds were strong and regular, it was decided to do Cæsarean section. There was, unfortunately, some delay in getting the patient ready, and the operation was not commenced until three hours after the patient's admission. The operation was performed in the usual way, and the child extracted without the least difficulty. The placenta, which was situated in the postero-lateral wall, immediately separated, and was removed along with the membranes. Unfortunately, the child, a female, was dead, no trace of a heart-beat being appreciable. It weighed 7½ lb., and measured 22 inches. The uterine wound was closed with catgut, and the abdominal in one layer with silkworm gut. The woman was sterilised by tying and cutting the tubes, as described in Case I.

The recovery of the patient was most satisfactory. The feature of special interest about the puerperium was the scantiness of the lochial discharge. At first this rather alarmed me, especially as during the first four days the temperature was never much below the 100°, and on the evening of the fifth day registered 101°, and the pulse was often running as high as 120. However, these slight disturbances in pulse and temperature disappeared by the sixth day. The lochia all through was very scanty.

The stitches were removed on the fourteenth day, at the time of the first dressing. The wound was quite dry and healed. The patient was dismissed from hospital on the thirty-second day, quite recovered.

Note on Case.—It is extremely unfortunate that the child was dead in this case, as it was chiefly on its account that Cæsarean section was performed. My colleague, Dr. Jardine, very kindly saw the case along with me, and we both considered it one of those cases where, as regards the mother, the risks from craniotomy and Cæsarean section were about equal. The child being alive, however, we decided on Cæsarean section. Unfortunately, I did not listen for the fœtal heart immediately before commencing the operation, as three hours before, at the time of the patient's admission, I heard it quite strong and regular. The child must have died in the interval, and not, I think, during the early stages of the operation.

CASE III.—Mrs. B., æt. 26, ii-para, was admitted to the Maternity Hospital under my care on 15th April, 1901, for the purpose of being delivered by Cæsarean section. Her pelvis was very markedly deformed in the conjugate diameter, but little affected in the transverse. The C.D. was 2¾ inches. Her previous pregnancy terminated at full time, the child being delivered with difficulty after craniotomy had been performed.

Labour in this second pregnancy began on the 25th. Dilatation of cervix was rapid, and before the patient was ready for operation the os was fully dilated and the membranes had ruptured. The fœtal heart was heard beating strongly immediately before operation.

The operation was performed in the usual way. There was great difficulty, however, in extracting the child as the uterus grasped it so firmly. It was delivered alive, but in doing this the uterine wound was enlarged by slight tearing of the lower segment. The child, a female, cried immediately after it was born. It weighed 6½ lb., and measured 21 inches. The placenta was situated on the posterior wall, and separated immediately after extraction of the child. The uterus was closed with catgut sutures, and the tubes were tied and divided as described. The abdominal wound was closed in two layers with catgut and silkworm-gut.

The patient's convalescence was very satisfactory until the fourth day, when in the morning the temperature rose up to 103·2° and the pulse to 162, the lochia became fœtid, and there was diarrhœa. I at once douched out the vagina and then the uterus with a solution of 1 in 2,000 perchloride of mercury. This had the desired effect, for in the evening the temperature was 100·6°. On the eighteenth day there was again a slight rise of temperature. The stitches were removed on the seventeenth day, when the wound was found quite healed and dry. She was dismissed from hospital on the twenty-eighth day. The only thing that was not just satisfactory was that she seemed unable to completely empty her bladder, as every time it was catheterised after she had urinated, there were several ounces withdrawn.

Note on Case.—The difficulties in extracting the child were very considerable. This was not due to the small size of the wound, but to the strong uterine contractions. Considerable advance had been made before it was discovered that the patient was in labour. As has been stated, the os was fully dilated, and the membranes were ruptured before the operation was commenced. The disturbance on the fourth day was very alarming, for the patient seemed very ill. It was immediately removed, however, by the intra-uterine douche, which I was very thankful I employed.

CASE IV.—Mrs. B., 32, iv-para, was admitted to the Maternity Hospital on 25th July, 1901. Her first pregnancy had terminated at full term, when she was delivered with "instruments." The child was dead. In the second, labour was induced at seven and a half months; again, the child was dead. In the third, labour came on spontaneously at the seventh month; and again the child was dead.

She stated that she last menstruated from 30th October to 3rd November, 1900.

She was not in labour when admitted. The examination of the pelvis showed a diagonal conjugata of 3½ inches. The transverse measurements of the pelvis were also below normal.

The operation was performed on 11th August, when it was calculated she must have reached "full time." She was not in labour.

The operation was performed in the usual way, the uterus being opened into by means of the longitudinal incision. The child, a male, was readily extracted. It was asphyxiated, but soon recovered. It weighed 5½ lb. The placenta was situated on the left postero-lateral wall. The uterine wound was closed with catgut, and the abdominal in layers with catgut and silkworm-gut.

The puerperium was uneventful. The temperature was only once above normal, when it registered 100.° The pulse was never above 90. There was no trouble with unusual after-pains from retention of clots. The stitches were removed on the sixteenth day, when the wound was found healed, with absolutely no trace of suppuration. The patient left the hospital on the thirtieth day after operation. The fundus uteri was then found fixed about 3 inches above the symphysis pubes.

Note on Case.—Everything ran an absolutely normal course. There was no disturbance from operating before labour had commenced.

CASE V.—Mrs. S., 26, ii-para, was admitted to the Maternity Hospital on 25th September, 1901. She was not in labour when admitted, but, as far as could be judged, had very nearly reached "full time." The pelvis was found generally contracted, with a diagonal conjugate of 3¼ inches.

The operation was performed in the usual way on 30th September. The uterus was opened into by a longitudinal incision. There was some little difficulty in extracting the child, as the incision was too small. The child was only slightly asphyxiated, however, and weighed 9 lb. The placenta was situated on the anterior wall, and was separated before the child was extracted. The uterine wound was closed with catgut, and the abdominal in layers with catgut and silkworm-gut.

The patient's condition was perfectly satisfactory during the first two days. On the evening of the third day, however, the pulse, temperature, and respiration rose; she also complained of pain. On the following day the same symptoms were present, although less marked. I examined the wound, but found everything satisfactory, and no localised pain there. I felt sure the disturbance arose from the bowels, as she really did not look ill. This turned out to be the case, for the disturbing symptoms entirely disappeared after a thorough evacuation. The rest of the puerperum was quite normal. The wound healed by first intention. She left hospital on 30th October, perfectly well.

Note on Case.—The sudden rise in the temperature, pulse, and respiration on the third day was rather alarming. It seemed, however, entirely due to absorption from the intestinal tract, because it fell after a thorough evacuation of the bowels.

CASE VI.—A. D., 25, primipara, was admitted to the Glasgow

Maternity Hospital on 27th September, 1901. Labour appeared just to be commencing. She had barely reached "full time," she thought. On examination the pelvis was found very much deformed, with a diagonal conjugata of 3 inches, and very considerable contraction in the transverse diameter. Her general condition was far from satisfactory, and she had double mitral disease.

Uterine contractions coming on regularly a few hours after admission, I decided to perform Cæsarean section. This was done in the usual manner, the uterus being opened into by a longitudinal incision. The child, which weighed 5½ lb., was extracted alive without much difficulty. The placenta, situated in the anterior wall, was removed before the child was extracted. The tubes were tied and cut. The uterus was closed with catgut, and the abdomen in layers with catgut and silkworm-gut.

For the first few days this patient's condition was very critical indeed. She suffered from great breathlessness, coughing, and restlessness, symptoms, however, attributable to the old-standing bronchitis and valvular disease of the heart. She was unable to lie down for some days, and so had to be kept propped up with a bed-rest. Gradually, however, the dyspnœa and orthopnœa disappeared. The abdominal wound healed by first intention, and the patient left the hospital on 6th November. Her general condition then was not quite satisfactory, and I wished her to go into a general infirmary and have further rest and treatment for the cardiac condition. That, however, she absolutely refused to do.

Note on Case.—The mitral disease was of old-standing, and for several years during winter patient had suffered from bronchitis. She had not been at all well during the pregnancy, breathlessness and coughing being often very troublesome. During the early days of the puerperium she was treated with one-sixtieth of a grain of strychnine and one-hundredth of a grain of digitalin, given hypodermically.

CASE VII.—M. M., 23, primipara, was admitted on 27th October, 1901, to the Glasgow Maternity Hospital. Labour appeared to have just commenced. From the size of the abdomen she did not appear to have reached "full time," but she insisted, on repeated questioning, that she had. The pelvis was generally contracted, and had a diagonal conjugata of 3¼ inches.

A departure from the ordinary incision of the uterus was made in this case. It was made transversely between the tubes, as recommended by Fritsch. There was very little bleeding from the uterine wound, and the child was easily extracted. It was alive, and weighed 4 lb. The placenta was removed with some difficulty, as both it and the membranes were very adherent. The stitching of the uterus was done in the usual way. This was certainly carried out much more comfortably than when the longitudinal incision was employed, as there was much less bleeding. The uterus was replaced, and a fold of omentum brought over the wound and anterior surface of uterus.

The recovery of this patient was uninterrupted. There was considerable shock, as evidenced by quickness of the pulse for the first two days, but otherwise she had no disturbances or discomforts. The wound healed by first intention, the stitches were removed on the fourteenth day, and she left the hospital thirty-four days after the operation.

Note on Case.—In this case I employed Fritsch's fundal incision for the first time. I was well pleased with it. The uterus, on dismissal, was fixed to abdominal wall some 3 inches above the symphysis.

Case VIII.—Mrs. M., iii-para, was admitted on 28th October, 1901, to the Glasgow Maternity Hospital. In both the previous labours the children were extracted with difficulty, and were dead. On the last occasion craniotomy had to be performed. The pelvis was of the flat rachitic type, the diagonal conjugate being 3¾ inches. There seemed to be little if any deformity in the transverse diameter. She was not in labour when admitted, but it came on twelve hours afterwards.

I intended to do symphsiotomy in this case, and so allowed labour to go on until the os was fully dilated. I then put her deeply under chloroform, with the view of finally deciding. On examining her, and testing the relative size of the head and the pelvis, I found that there would probably be difficulty in extracting the child, and great separation of the pelvic bones if I performed symphysiotomy. I therefore chose Cæsarean section.

The operation was carried out as in Case VII, the transverse incision, "nach Fritsch," being employed. In this case I came right down on the placenta, which I removed before extracting the child. The child, which weighed 8 lb., was extracted very easily, and the uterine wound stitched with little trouble or bleeding.

This patient had a good deal of retching and vomiting during the first three days, but otherwise there were no unfavourable symptoms. The temperature was never above normal, and the pulse after the first three days was not accelerated. The wound healed by first intention, the stitches being taken out on the fourteenth day. She left the hospital on 30th November.

Note on Case.—Here, again, I was well pleased with the "fundal incision." The day she left hospital I examined the uterus, and found it attached firmly to the abdominal wall to the right, and about 4 inches above the symphysis pubis.

CASE IX.—Mrs. N., 25, primipara, was admitted to the Glasgow Maternity Hospital on 15th January, 1902. She had been sent to see me some months previously by her medical attendant, Dr. Findlay, of Dennistoun, because of the extreme degree of pelvic deformity. We both made out the diagonal conjugata to be only 2½ inches. Cæsarean section was recommended at that time, and she was advised to go into hospital a few days before labour was expected. Labour came on twenty-four hours after her admission.

The operation was performed when the os was well dilated. The "transverse fundal incision" was employed. The child was easily extracted, but the bleeding was profuse. The placenta was situated on the anterior uterine wall, but one part extended up to the higher part of the fundus, as the edge was met with the incision. The membranes were very adherent, and had to be stripped up in pieces with the fingers.

The puerperium was absolutely uneventful, and the patient made an excellent recovery. The stitches were taken out on the fourteenth day, when the wound was found absolutely healed and dry.

Note on Case.—In this case I was not so pleased with the "fundal incision," because there was so much bleeding. The extraction of the child was easy. When the patient left hospital, the uterus was firmly attached about 4 inches above the symphysis.

The results in these cases, all the mothers and eight children saved, are very satisfactory. The reason for that, I believe, is largely the fact that few of the patients were in labour before admission, and only one had been handled outside of the hospital.

Where labour has been going on for some time, and especially when attempts have been made at delivery before the patients are sent into hospital, their chances of recovery are very considerably lessened. This may readily be seen by comparing the mortality in such cases with those who have had a few days' residence in hospital prior to operation. It is, of course, not always possible to send a patient into hospital before labour; many of the cases are never seen by the practitioner until labour has commenced. To send them in as early as possible, and without making futile attempts at delivery, might, however, be much oftener practised. The example of Dr. Findlay, in Case IX, might also be more often followed, and the patient thoroughly examined during pregnancy.

Another factor, which has very largely contributed to the satisfactory results, is the extreme care which is taken to avoid infection. Let me briefly refer to some matters in that connection.

The preparation of the patient.—She is first very thoroughly washed. All hair is shaven off the pubes and abdomen, and turpentine and alcohol, in addition to soap and water, is used for cleansing these parts. If time permits, dressings of 1 in 40 carbolic are applied over the abdomen for twenty-four to forty-eight hours prior to the operation. The vagina, and especially the fornices, is thoroughly washed out with swabs, soap and lysol being used. Simple douching I do not think is sufficient. The vagina is wonderfully free of pyogenic organisms, as a rule, but sometimes it is not. Quite recently I saw, in consultation, a case of septic abortion. The woman's medical adviser had never examined her; no one had examined her. Occasionally, also, we get cases in hospital where there is a febrile disturbance during the puerperium, and yet there have been no vaginal examinations made. The bowels of the patient are thoroughly and, if possible, repeatedly cleared out, and suitable diet given.

The operator and assistants.—The hands and arms are cleansed with soap and water, turpentine, alcohol, and perchloride 1 in 1,000. About ten minutes are taken to do this. The assistants are limited, and indeed only three are required—a chief assistant (and here I must express my indebtedness to Dr. A. W. Russell, who has so willingly helped me in all cases), another to look after the instruments and thread the needles, and a fourth, a nurse, to look after the swabs. Two others look after the infant and collect the soiled swabs (for we never use a swab twice), but they have no direct interest in the operation beyond that, and so there is no chance of infection from them.

Swabs, ligatures, dressings.—The swabs are squares of absorbent wool covered with gauze, sterilised in the steriliser, and packed ready for use. I always boil them immediately before operation. Usually about thirty are used at each operation.

The sutures used are catgut and silkworm-gut. The latter is boiled. The former, Hartman's prepared catgut, is boiled in absolute alcohol in a Jellet's steriliser for thirty minutes. Although supposed to be sterile when one buys the gut, I am not sure that it is always so. During last year I used it in twenty cases of abdominal section. One case died septic on the third day, a case of ruptured uterus; the gut, of course, had nothing to do with that result. All the other cases recovered. In the nineteen cases that recovered, all the wounds healed by first intention, except one. The case was one of an ovarian tumour, with a twisted pedicle, where suppuration occurred in the deep sutures in the abdominal wall. In that case the gut had not been previously boiled as described. Silk, sterilised by boiling, is used for tying the tubes. Only once was it used for stitching the uterus. The dressing used has always been double cyanide gauze.

The operation.—In the first six cases Cameron's method of operating was followed. The incision into the uterus was longitudinal, and while cutting down on the membranes the pessary first mentioned by him was employed to control the hæmorrhage. I have sometimes seen its efficacy questioned, but I always wonder if such a critic has tried this ingenious device, for, personally, I have never seen it fail.

The uterine wound I close with interrupted catgut sutures, passed through the entire wall, except the mucous membrane, and over the lower part of this sutured wound I bring a covering of peritoneum with a continuous suture.

In two cases, the patient was not sterilised, because she was so strong and healthy. I am quite prepared to admit that the advisability of such a step is still *sub judice.* Many cases are now on record, however, where the operation has been repeatedly and successfully performed on the same patient. If it is proved that a uterus which has been sutured is specially liable to rupture in a subsequent pregnancy or labour, or if the mortality in cases where the operation is performed more than once turns out to be unusually high, then I am perfectly prepared to sterilise the patient in all cases. Until, however, that is proved, I do not intend doing so, if the patient is a strong healthy woman.

The ordinary routine method of performing the operation was not followed in the last three cases. With them, I opened into the uterus by the "fundal incision" recommended by Fritsch. By that method the uterus is turned out of the abdomen, and an incision is made over the fundus transversely from one tubal attachment to the other.

Fritsch, and the advocates of this incision, claim the following amongst its advantages:—(1) The abdominal wound is much higher, and consequently the chance of a subsequent ventral hernia is less. (2) There is less bleeding. (3) The placenta is less frequently cut down upon. (4) The child can be more easily extracted. (5) The lower uterine segment is not injured, and the wound can be more satisfactorily stitched.

I hope to discuss this matter of the "fundal incision" in some detail in another paper.[1] At present I would only say that I am quite prepared to admit that the fundal incision has certain advantages. The child can be very easily extracted, the uterine wound more satisfactorily stitched, and the wound in the abdomen is certainly higher up; but that there is less bleeding, or that the placenta is less frequently cut down upon, has not been my experience. In the six cases where I made a longitudinal incision, I came down on the placenta on two occasions; in the three cases where I made the transverse incision, I came right down on the middle of it once, and on the edge once. As regards the bleeding in the first two, there seemed to be less, but in the third the bleeding was very considerable, and was not controlled by sutures at each side, as has been the experience of some operators.

The most important question, however. and the one that will decide the fate of the fundal incision, is the after-results. In all my three cases, the uterus was very firmly attached high up to the lower part of the abdominal wound. The patients had absolutely no discomfort when they left, but I could not tell if intestinal adhesions were very extensive. In the six cases where I employed a longitudinal incision, I found the uterus fixed as after a ventro-fixation in all except one case. The fixation, however, was not so high up, nor did it appear so intimate as in the cases where I employed the fundal incision.

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[1] This paper will shortly appear in the *Journal of Obstetrics and Gynæcology of the British Empire.*

RUPTURED PERINEUM—THE MECHANISM OF ITS CAUSATION: ITS PREVENTION AND TREATMENT.

BY S. L. CRAIGIE MONDY, M.R.C.S. ENG., L.R.C.P. LOND.

THIS subject has received a good deal of attention in the medical journals from various correspondents, but the majority have mentioned certain instruments they have found useful in the prevention of lacerations during the passage of the fœtal head through the vulval orifice. Few seem to take into consideration the fact that the tear in many, if not most cases, begins within the vagina, and may thence extend through the perineal body in various ways. I propose, in this article, to discuss the injury in the manner indicated by the title above.

First, then, as to the mechanism by which the perineum is ruptured, taking a case of vertex presentation. The vagina and perineum are both made up of molecular parts, which will allow of a certain amount of stretching when the fœtal head descends. With the pubes in front and the sacrum and coccyx behind, support is given to the vagina at these points, so that the stretching is chiefly from side to side, and the rupture will take place in a direction at right angles to this, *i.e.*, anteriorly and posteriorly. The lower end of the vagina being the narrowest, is the part which will require to be stretched most in the passage of the fœtal head, and receiving the least support is generally the earliest to be torn. From this point the rupture may, as the head descends, extend upwards along the vagina—an infrequent occurrence—downwards to the fourchette, thence backwards through the perineum, the anus, and rectum, or through the perineal body (central rupture). The extent of the tear depends on—

1. The size of the fœtal head as compared with the vaginal canal and vulval orifice.
2. The elasticity of the vaginal and perineal tissues.
3. The rapidity with which the head stretches the maternal parts.
4. The presence of an anteverted coccyx.
5. The amount of support given to the perineum by the accoucheur.

1. With an average-sized head and parturient canal there

may be no tear, or it may be confined to the lowest three-quarters of an inch of the vagina and the fourchette, and from these limits, with various disproportions between the fœtal head and maternal parts, it may extend in the manner mentioned above.

2. The elasticity of the maternal tissues is also a great factor in the determination of the extent of the rupture. In the young primiparous woman the elasticity is greater than in the woman who is giving birth to her first child after she has turned the age of 30 or 31, and thus the rupture is liable to be greater in the latter. In the multiparous the tissues are looser, and give more the greater the number of children already borne.

3. When the expulsive power of the uterus is very strong, and the efforts frequently repeated, the head is driven with greater force and frequency against the maternal tissues, and these being suddenly stretched, will be liable to give way over a greater extent. With weaker and less frequent pains, the tissues have more time to adapt themselves to the required dimensions, in order to allow the head to pass. When forceps are used, the head is apt to be dragged through the vulval orifice too rapidly, and rupture is more likely to take place. In forceps delivery, again, the edge of either blade, being sharp, may start a rupture, which, by the forcible delivery of the head, is very prone to extend both up the vagina and through the perineum. For both these reasons I have thought it better practice, when forceps are being used, to withdraw the forceps as soon as the head has passed the limits of the bony pelvis and is lying on the perineum, and thus leave the contractions of the uterus to expel it.

4. If the coccyx in the mother be anteverted, the hard fœtal head pressing against it will bruise the vaginal and rectal tissues and the recto-vaginal septum, and these may, later on, slough. If, however, the pressure be very great, when the fœtal head comes into apposition with the tip of the coccyx, it may force the coccyx through the intervening tissues, and thus the tear being started may extend as the head descends.

5. When the head is stretching the perineum and vulval orifice there is nothing to support these parts. If they are supported by the accoucheur's hands placed one on each side of the perineum, in such a manner that the palms of the hands

grasp the perineum over the head, and the tips of the fingers are placed close together along the limits of the vulval orifice posteriorly, extensive tearing of the perineum, or even in many cases any external rupture may be entirely prevented by pressing the palms of the hands inwards, and at the same time keeping up continuous gentle pressure on the head in a forward direction. The tips of the fingers support and press towards the median line the tissues around the posterior end of the vulva. While the posterior end of the vulva is retracting over the fœtal face, the fingers still keep up their pressure towards the median line, and at the same time press the head forwards, so that the back of the neck is kept firmly pressed against the pubes.

What part of the fœtus is it that commonly causes the rupture? The answer to this question, in my opinion, is that it may be either the nose, the chin, or the posterior shoulder, but of these the most frequent is the chin. Were the shoulder the chief cause, we should expect, in breech presentations, to find that rupture had taken place just as the shoulders passed the vulva, but this is not so frequently noticed as after full delivery, or after delivery of the head in vertex presentations. With breech presentations, ruptured perineum is, I believe, less frequent than with vertex, because one of the causes of breech presentation is a pendulous abdomen in a multiparous woman, and in her the vulval and vaginal tissues are looser than in the primiparous. The nose in the fœtus is so soft that it generally gives to the pressure of the perineum and becomes flattened against the face. The chin is harder and sharper than the rest of the head, and I believe that the rupture is started as it emerges from the vagina. While the chin is passing the vulva the largest diameter of the fœtal head which engages in the vulva—the sub-occipitomental—is passing through, and this again would tend to cause the rupture.

Now, let us turn to the discussion of the means by which lacerations may be either prevented or, at anyrate, limited in extent. Of course, in primiparæ, some tearing generally, though not always, occurs. The fourchette, and, perhaps, the lowest one-half or three-quarters of an inch of the vagina may be torn, but further extension of the rupture can, in the majority of cases, be prevented. When the head comes down on the perineum, if I find that there is more than the usual rigidity in the perineal tissues, or that the vulva is very small, and will not dilate very fully, I apply hot fomentations to them. By this means the tissues are softened, and thus rendered more elastic. If the pains are very strong and frequent, I remove the "pulley" with which the patient has been assisting her bearing-down efforts, and tell her not to bear-down so forcibly. At the same time I regulate the rapidity of the advance of the head by steady pressure with my hands on the perineum. As soon as the perineum is well stretched, and the head is beginning to engage in the vulva, I direct the pressure slightly forwards so as to keep the occiput well applied to the pubes. As the head advances, I place my hands over the perineum, and my fingers around the posterior end of the vulva, in the manner I stated in describing the method of supporting these parts. As regards the rapid delivery of the head with forceps, I have before said that I consider it better practice to remove the forceps before the head is delivered. Various instruments have been invented with the idea of preventing rupture, but the majority, if not all, through taking up space themselves, tend to cause the very injury they are meant to prevent. A slightly curved piece of metal (nickel-plated) might perhaps prevent the nose or chin from starting a tear in the middle line, but its own edges would be apt to cause one on either or both sides of the perineum. The old-fashioned idea, which is occasionally resorted to even now, of making incisions on each side of the vulva and perineum, running parallel to the labia majora, is a practice which cannot be too strongly condemned. To prevent a single rupture in the median line it seems ridiculous to make two incisions where they will be more exposed to the chance of infection from outside. In cases where the membranes have ruptured early, and the labour has been protracted, resulting in a hot and dry state of the vagina, some lubricant rubbed on the inside of the vagina would help to prevent tearing, and would assist the onward progress of the head. For this purpose I would advise the use of an iodo-vaseline ointment containing iodoform (16 or 32 grs. to 1 oz.).

Assuming that the accoucheur has been unable to prevent a laceration, let us now consider the best methods of treating it. The first question that arises is—What extent of tearing can safely be left without stitching? It is my practice in cases where the tear is not more than half an inch in the perineum of average length, or even three-quarters of an inch in one of more than average length—by average length I mean an inch and three-quarters—to leave the rent to heal up by granulation, merely giving orders that the knees be kept tied together, and that some of the iodo-vaseline mentioned above be applied to the laceration each time after washing the external genitals and perineum. I never douche any case unless either instruments have been used or my hand has been introduced into the uterus for any purpose. When there has been a laceration, I think it advisable to keep the patient in bed for at least fourteen days, so as to give the tear every chance to heal, and to secure full involution of the uterus and vagina, a state which in itself prevents prolapse of the womb. Lacerations of greater length than those I have mentioned above I always stitch up at once, using as many stitches, placed about three-eighths of an inch apart, as are required to bring the length of the perineum back to its former dimensions. Some authors say that lacerations into the rectum through the sphincter ani should be left till thorough involution has taken place in the uterus, and should then be dealt with by a plastic operation, such as that done by the late Mr. Lawson Tait, or that recommended by Dr. Herman. I have never had such an extensive tear, but if I do, I shall stitch it up at once. As regards the best needle and sutures to use, I have found the needle on handle to be the best. With reference to the sutures, some use silver wire, others silk, and others gut. The silver, I find, are apt to cut their way out. I prefer to use silk, except for buried stitches or those high up in the vagina or rectum, when I should use gut, as they can be left to dissolve, and thus avoid disturbing the parts. When a ruptured perineum has been left till involution is complete, one or other of the well-known operations may be undertaken. The one I should personally choose is that described by Dr. Herman in his *Diseases of Women*, 1899 edition, pp. 717-719, as in it there is no loss of tissue.

CURRENT TOPICS.

COMPLIMENTARY DINNER AND PRESENTATION TO DR. THOMAS.

Dr. Moses Thomas, who has retired from the office of Superintendent of the Glasgow Royal Infirmary after thirty-five years' service, was entertained to dinner in the Grand Hotel on the evening of Friday, 2nd May. Mr. Hugh Brown presided, in the absence of Lord Provost Chisholm, and Mr. Robert Ramsey acted as croupier. The company numbered nearly fifty gentlemen, among whom were Bailie John F.

Miller, Professor T. M'Call Anderson, Mr. Timothy Warren, Drs. Neil Carmichael, Alex. Robertson, M'Vail, Middleton, Lindsay Steven, Monro, Allan, Clark, Adams, Newman, M'Lennan, Pringle, J. K. Kelly, John Macintyre, Maitland Ramsay, and others.

The loyal toasts having been duly honoured, the croupier gave the "Imperial Forces," the toast being acknowledged by Professor Clark. The chairman proposed "The Guest of the Evening." He was, he said, with one or two exceptions, the oldest friend of Dr. Thomas, and he had been associated with him in connection with the Royal Infirmary since 1872. Dr. Thomas was born within sound of the Cathedral bells, and he had spent his life in Glasgow, and had been a busy man all the time. He began his career as superintendent in the Barony Poorhouse, and, following that, he was in private practice until his appointment as superintendent of the Royal Infirmary. He had occupied that post since 1867, and had succeeded in it in a very remarkable degree. It might have been complained sometimes by members of the staff that Dr. Thomas had adopted rather strong measures; but the complainers, with scarcely an exception, had afterwards admitted that Dr. Thomas had invariably been right. On behalf of the Managers, former and present members of the Infirmary staff, and friends, he presented Dr. Thomas with a handsome silver tea and coffee service and silver salver bearing a suitable inscription, in which the name of Mrs. Thomas was associated with that of her husband.

The following is Dr. Thomas's reply:—

"Mr. Chairman, Croupier, and Gentlemen,—I am unable to express in sufficiently warm terms what I feel on the present occasion. I thank you from the bottom of my heart for the valuable and handsome gift you have presented to me. After serving the Infirmary for the last five and thirty years, it is pleasing to feel on retiring from the office of superintendent that my services have been so handsomely appreciated by the managers and by the medical staff. The office is not an easy or a luxurious one, and therefore I feel thankful to all who have united in giving me this cordial and unexpected expression of their goodwill at the end of the long period I have gone out and in amongst them. Sir William Gairdner, Dr. George Buchanan, Dr. M'Call Anderson, the late Sir George Macleod, and the late Dr. Eben. Watson united in giving me a present many years ago; and I have received many letters from former residents expressing their thanks to me, one of which I will take the liberty of reading, as it comes from one well known to you all, and bearing an eminent name in the profession. It is dated 26th March, 1870:—

"'I can assure you, Dr. Thomas, that every one of my colleagues regards you with the very highest esteem, and they express themselves as being very comfortable while you direct things for them.—Believe me, most sincerely, WILLIAM MACEWEN.'

"Whilst it is very gratifying to receive these, I value above them all this substantial token of your regard, not from its intrinsic value alone, but because it comes from a wide circle, including many who have held and who now hold high office in this my native city. It comes also from the medical staff, with whom I have had many dealings, than whom there are none more distinguished in the profession, or on whose opinion more reliance can be placed. I had daily intercourse with them, either as residents or on the dispensary or visiting staff, and, possessed as they are all of great individuality, I feel it a very high compliment indeed that they have united to entertain me in this manner. They are unsparing critics as well as accomplished physicians and surgeons. We did not always see eye to eye, yet I think the managers will bear me out when I say that very few appeals from my decisions were brought before them for their final judgment.

"I thank you warmly for associating the name of my wife with mine in the inscription. All our married life has been spent in the Infirmary, and she leaves it with as much regret as I do."

Dr. Thomas further submitted the following history of the Infirmary during the period in which he held office:—

"In 1867 I was unanimously elected Medical Superintendent of the Royal Infirmary. Of the managers who were on the Board at that time, Sir William Gairdner and Sir David Carrick Buchanan alone survive; and of the staff, Sir William Gairdner, Lord Lister, Dr. George Buchanan, Dr. Perry, and Dr. Maclaren remain. Dr. Perry was fever physician, and Dr. Maclaren was on the dispensary staff. Dr. (now Sir) Hector Cameron, with whom I am sure we all sympathise in his present bereavement, was senior resident, and was assistant to Mr. Lister, and Dr. Tennent was assistant to Dr. Gairdner; and it is gratifying to know that these gentlemen occupy the distinguished positions they do in Glasgow. The expenditure for the year was £18,603, an excess of £3,052 over the income, and the number of patients, including fever and small-pox, 5,550. In connection with these figures, I may say that, in the three or four years succeeding, the income was in excess of the expenditure, with a larger number of patients treated; but, in 1901, the expenditure was £35,941, an excess of £7,750 over the income, which, I am glad to say, has also increased, notwithstanding the presence of two other infirmaries, which were required to meet the growing wants of the city. The number of patients under treatment last year was 7,246. To show how these wants have increased, I may mention that, in 1867, the number of operations was 321; last year the number was 2,039, over six times more than what it was in the first-mentioned year. The health of the patients not being good in certain of the wards, the managers caused the old burying ground at the back of the North Surgical House to be opened up, and the bodies destroyed with lime, chloride of lime, and crude carbolic acid; and as there was a want of ventilation, they caused 60 feet of the wall facing Castle Street to be taken down, and a railing erected in its place. This was a vast improvement, and met with the approbation of Mr. Lister, who, before this, and on account of the great mortality in Ward 24, had been working at what is now known as the antiseptic mode of treatment, which he virtually perfected in the Glasgow Royal Infirmary.

"As the admission of fever patients gradually diminished, the wards they formerly occupied were appropriated to the treatment of surgical patients; and, as the surgeons had to come downstairs to get to them, this inconvenience was done away with, and the wards placed *en suite* as at present. This took place in the following year, and in the same year extra physicians and surgeons were appointed to meet the growing demand for advice at the dispensary. A vaccinator, also, was appointed. Previous to this, vaccination was performed by the residents, but as the Government now required a certificate from medical men before they could obtain a Poor Law appointment, the managers appointed Dr. Robert Tannahill, a former physician to the Infirmary, to the post.

"On 1st January, 1868, the first meeting of the managers with the nurses was held in the committee room, and, if my memory serves me right, it was addressed by Dr. Donald Macleod. Mr. (afterwards Sir) James Lumsden was Provost, and presided over the meeting, which has been held annually ever since.

"To improve the housing of the nurses, and to give more dispensary accommodation, the washing-houses, then facing Castle Street, were taken down in 1869, and the corridor, dispensary, and a new house for the superintendent were erected. This was a step towards the better accommodation of the nurses. I may mention that I had verbally suggested to Mr. M'Ewen the advisability of taking a house somewhere near hand, and that they should live outside; but the idea did not then meet with his approval. The wages of the nurses were, however, increased.

At this time a source of danger to the patients was discovered in the intolerable stench coming from the graves opened for interments in St. Mungo's burying ground. Mr. M'Ewen and other managers came up and smelt the effluvia for themselves. The former immediately wrote to the Lord Provost, who thereupon stopped the interments, except, of course, such as were allowed by law.

"In 1870 clinical lecturing was thrown open to all the staff. Previous to this only two lecturers in each department could lecture in winter and in summer; but this was done away with, and the student was allowed to choose the lecturer he liked best as a clinical teacher. The hour of visit, which at that time was 8·30 A.M., was changed to 9 A.M., with comfort to the patients, and, I may also say, to the staff and to the students.

"In the following year I was sent to London to report on the nursing and dispensary arrangements. I visited St. Thomas's, Bartholomew's, Guy's, and the London Hospital with Mr. M'Ewen and Mr. William Stirling. The report I then made was printed and circulated amongst the directors and the staff, and anyone who wishes to see it can obtain a copy from the superintendent. It embodied nearly all the improvements that have taken place, and, at the same time, suggested that medicines should be given to the dispensary patients, as prescriptions were of no use to the class who applied for advice, as they were without the means to pay for them.

"In 1872 Mr. Hugh Brown, who for over seventeen years was our chairman, was appointed a manager in place of Mr. James Hannan. A clinical and physiological laboratory was instituted, and the reception of small-pox discontinued. Up to this time there were only three baths in the medical house, and, as you can imagine, this was very inconvenient. Baths were therefore introduced into all the medical and fever wards.

"In 1873 I was again called on to report on the nursing. This I did by recommending that a staff or head nurse be appointed to each physician or surgeon to take charge of all the wards under that physician or surgeon, and to give an assistant to each ward. An alternative was to give the matron an additional assistant, to allow the nursing to remain as it was, and to provide the nurses with a uniform. A superintendent of nurses was appointed.

"Negotiations with the University for the Royal Infirmary managers to take charge of the Western Infirmary were finally and fortunately broken off. The condition of the nursing was again made the subject of a report, and further improvements effected; and in 1875 the hoist in the surgical hospital, to take accident cases to the wards, instead of carrying them upstairs, was put in.

"In 1876-77 I again submitted a report on nursing to the managers, at their request. The gist of it was a recommendation that the assistant day and night nurse should alternate; that all scrubbing and menial work should be taken off probationers and night nurses, and an adequate staff of cleaners be provided for such work once a week; that the wages be increased, and that the nurses should take their meals in common; that they should be relieved of going to the laboratory, kitchen, store, &c.; and that the ashes and refuse should be removed by the coal porters, and that those cleaners who could not be accommodated within could live outside the hospital. The recommendations were approved of, but the uniform to the nurses was not introduced until 1879.

"In 1877 the surgical wards were heated with hot water, a ward for diseases of women was opened, and lectures on nursing were given by the superintendents.

"In 1879 the washing-houses were removed to their present site, to make room for the Dispensary and the School of Medicine, now St. Mungo's College. In 1885 heating was introduced into the medical wards, the Dispensary staff increased, and Mr. Hugh Brown elected chairman, in place of Mr. M'Ewen, resigned. Typhoid fever was excluded in 1884, and in 1886 Mr. M'Cowan was elected treasurer. In 1887, under the chairmanship of Mr. Brown, it was finally decided to build the Nurses' Home; and this was formally opened by Sir James King, Bart., then Lord Provost, in the Conservatory, which was at that time a new feature in this or any hospital. In July of 1891 a final report on nursing, increasing the staff and reducing the number of hours on duty, was approved of and partially introduced. The total number of nurses in 1867 was 64; it is now 150.

"In 1892 the new scheme of educating the nurse probationers was introduced, and has been found to work admirably.

"I may mention that the drains were all overhauled, iron pipes put in instead of lead for soil pipes, and the smoke test is applied yearly or oftener to see that they are in good order. In 1895 the Schaw Convalescent Home, a magnificent building erected by Miss Schaw as a monument to her brother, the late Mr. Archibald Schaw, was opened. Miss Schaw gifted the Home to the Royal Infirmary.

"But I will not weary you by recapitulating all that the managers have done in the way of improvement and to keep the Infirmary up to date. You all know about the erection of the Bellahouston and of the new additional theatres, so that every surgeon may have a theatre to himself; of the electric pavilion, under the care of Dr. Macintyre, and for which he is getting the finest electrical apparatus. I had hoped to see these completed before I left, but it was not to to be. The great work still requires to be done—viz., the reconstruction of the Infirmary.

"In bringing these remarks to a close, I have to thank you, Mr. Chairman, for the honour you have done me in being the medium of presenting me with this magnificent testimonial; and I thank you, gentlemen, for the very great kindness you have all shown me. I shall always look upon it with pride and pleasure, and it will be a remembrance of you all and of the time I spent in the old Royal Infirmary. It is a great wrench in my life to leave it, but sooner or later it had to come. One word before closing. I regret the absence of the chairman, Mr. Hedderwick, on account of his health. I hope he will soon improve, and be in a condition to begin the great work for which he is admirably qualified. He has sent me a most kindly letter, for which I thank him."

The following toasts were afterwards submitted:—"The City of Glasgow," proposed by Dr. Yellowlees, responded to by Mr. John F. Miller; "The Glasgow Royal Infirmary," proposed by Professor M'Call Anderson, responded to by Mr. Timothy Warren; "St. Mungo's College," proposed by Dr. Lindsay Steven, responded to by Mr. Robert Ramsey; and "The Chairman," proposed by Dr. Middleton.

GLASGOW EYE INFIRMARY.—Dr. W. Ernest Thomson has been appointed Surgeon to the institution in room of Dr. Wm. Robertson, resigned.

NEW PREPARATIONS, &c.

"TABLOID" LIQUORICE COMPOUND POWDER, GR. 30 (1·944 gm.) (London: Burroughs Wellcome & Co.), has been introduced with the view of providing a convenient means of administering this well-known laxative. Each product represents 30 grains of the compound liquorice powder of the *British Pharmacopœia*, and two to four may be swallowed with water for a dose. The tabloids are issued in bottles containing 25 and 100.

THE ARMSTRONG BEEF AND MALT WINE (Glasgow: James Murray & Sons, Limited).—The combination of the two valuable foods, beef and malt, in the form of extracts, with the stimulating and palatable port wine has long been a favourite one, and is indicated for a certain class of cases. The present preparation has a good selected port as its basis, and contains, in addition, soluble meat albuminoids and malt extract. The makers state that the process of treating the wine with the beef and malt extracts, before bottling, occupies about four weeks. They attach importance to the preservation of the original flavour of the wine, and in this aim we believe they have succeeded. We have tested the wine in suitable cases in the wards, and have found it to give satisfaction.

MEETINGS OF SOCIETIES.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1901-1902.

MEETING IV.—22ND JANUARY, 1902.

The Hon. President, DR. W. J. SMYLY, *in the Chair*.

THE TREATMENT OF ENDOMETRITIS.

BY DR. W. J. SMYLY.

Dr. Smyly's paper will be found as an original article in our issue for May, 1902, at p. 321.

MEETING V.—12TH FEBRUARY, 1902.

The President, DR. ROBERT JARDINE, *in the Chair.*

ADJOURNED DISCUSSION ON THE TREATMENT OF UTERINE FIBRO-MYOMA.

Dr. Nigel Stark said that the subject had been so exhaustively treated by the previous speakers that not much fresh ground could be broken. He thought that another discussion could be profitably engaged in on the subjects of the diagnosis and prognosis of uterine fibro-myomata. He in part disagreed with one of Dr. Edgar's propositions—that a fibroid tumour should be removed if it were growing. Various conditions had to be taken into consideration in modification of this statement—the rate of the growth, the age of the patient, and the symptoms produced. There would require to be a very steady and rapid growth in a comparatively young patient before one would determine to operate in the absence of other symptoms. He had no experience of electrical treatment which required so much special knowledge of apparatus, but nearly all evidence went to show that such treatment was beneficial only in moderating hæmorrhage, and he had always had the best possible results from the use of the curette. In some instances, benefit would also be obtained from the prolonged administration of ergot. He had never performed vaginal hysterectomy on account of a uterine fibroid, as he recognised the fact that disease of the tubes and ovaries frequently co-existed, and that such diseased organs, as well as adhesions, could be dealt with properly only by the abdominal route. In most cases he decided against panhysterectomy, as the cervix was usually free from disease, and its retention strengthened the floor of the pelvis.

Dr. Carstairs Douglas said that the only contribution towards the discussion which he could offer was his experience of Apostoli's treatment. He had had a fairly extensive acquaintance with it for thirteen months, when Professor A. R. Simpson's assistant. He had seen symptomatic improvement result in a considerable number of cases, but could not recall one in which there was permanent diminution in size of the growth. For pain and pressure symptoms the negative pole was used internally; for hæmorrhage, the positive. One death had occurred, apparently directly traceable to the treatment. He agreed with Dr. Edgar that bleeding was treated as effectually and in a much shorter time by curettage.

Dr. Edgar, in reply, thought the discussion had been profitable. The majority of the speakers agreed with him that curettage was, as a rule, preferable to the Apostoli treatment. He had tried electro-puncture, but had found sloughing to follow in some cases, and therefore would not recommend it. He could not agree with Dr. Kelly that the expectant and medical forms of treatment were practically the same. The chief aim in expectant treatment is to keep the patient unaware of the existence of a tumour, or to keep her from worrying about it if she should happen to know of it. Another important purpose which the separation of these two forms of treatment serves, is to impress upon medical men the fact that no treatment short of surgical measures is of avail for the removal of myomata, and that very often these tumours cause no trouble and require no active treatment. He was pleased to find that, though some modern surgeons condemned supra-vaginal amputation of the uterus, none of the speakers had adopted this attitude.

As regards the question of marriage, his practice was to advise against it, unless the tumour were submucous or subserous, and the patient consented to its removal before marriage.

MEETING VI.—26TH FEBRUARY, 1901.

The President, DR. ROBERT JARDINE, *in the Chair.*

I.—FRESH SPECIMENS.

A. BY DR. A. W. RUSSELL.

Cystic tumour of the round ligament.—Tumours of the round ligament are so comparatively rare that it may interest the Fellows to see this specimen, removed several days ago from a girl of 19. She first observed it as a small swelling in the right groin about eight months ago, shortly after severely straining herself there in endeavouring with her right hand

and right knee to raise a flat heavy piece of wood, weighing about 30 lb., to the height of the table at which she was working. Three or four weeks later a small swelling was felt in the right groin. It has persisted ever since, excepting for a fortnight about three months ago. At her last menstrual period she thinks it became larger, and menstruation has been too frequent and scanty. When it was examined, the swelling was found to be superficial to the external inguinal ring: was like a small ovary in size and shape, tense, not fluctuant, nor specially tender. Complete vaginal examination was impossible owing to the state of the hymen, but the uterus was found to be displaced upwards and to the right side, and its axis was changed in direction as if the uterus were slung up to the internal opening of the inguinal canal by its round ligament. The opinion was given to her doctor that it was probably an ovarian hernia, but it might be a glandular enlargement or a cystic growth. To remove it, after careful asepsis, an oblique incision was made over the external ring, and the tumour was dissected out. The round ligament, nearly as thick as a pencil, was found to spread itself over the tumour, and it was transfixed, tied with catgut, and freed so as to let it be withdrawn into the inguinal canal. The edges of the ring were brought together with a buried mattress suture of silkworm-gut, and the wound was afterwards sutured with silkworm-gut. When inspected to-day, the wound was found to be healed.

B. BY DR. JOHN EDGAR.

Cancer of cervix uteri—Vaginal hysterectomy.—There are three points of interest in this case.

1. Though the cervix is extensively involved, there has been no history of hæmorrhage. From May till August last there was amenorrhœa. The period in August was normal in duration, but somewhat profuse; that in September was normal in all respects. Thereafter there was again amenorrhœa till January, when a normal period occurred. In February menstruation came on at the proper time, but lasted only three days instead of six, and was scanty. The cancer would not have been diagnosed had it not been for a subacute attack of pelvic peritonitis. Dr. Wilson, who was called in, examined her, and diagnosing cancer of the cervix uteri, sent for me on 11th February. I confirmed his diagnosis, and got the patient admitted into the Samaritan Hospital. On 22nd February I curetted the cervix and applied pure formalin.

This morning (26th) I performed vaginal hysterectomy. Patient stood the operation well.

2. The second point of interest lay in the firm adhesions present on both sides of the uterus. My practice in these cases is to examine recto-abdominally, and if, as in this case, I find the adhesions free from small nodules and also yielding to pressure, I conclude that they are simply inflammatory, and that the uterus, though fixed, should be removed.

3. The bladder was found to be so firmly adherent to the cervix that I had to defer the complete separation of it till near the end of the operation. After separating as much of it as I could, I opened into the pouch of Douglas, and, having retroflexed the uterus by means of the sound, I pulled the fundus through the opening, and tied and cut the upper parts of the broad ligaments. Then, after incising the peritoneum covering the anterior surface of the uterus, I managed with some difficulty to separate the bladder. As the adhesions on both sides were tense, and prevented the uterus from being brought down, I finished the operation by clamping the bases of the broad ligaments and removing the uterus with scissors.

II.—LABOUR IN A BICORNATE UTERUS (UTERUS DIDELPHYS) AND DOUBLE VAGINA.

By Dr. Robert Jardine.

Abnormalities in the development of the uterus are so rare that I feel warranted in bringing the following case before you. I was exceedingly fortunate in seeing the case and recognising the condition very early in pregnancy.

Mrs. W., æt. 27, i-para, came under my care at her own home on 2nd November, 1900, suffering from persistent vomiting. She had been married in February, 1900, and previous to that had been a ward-maid in the Western Infirmary for seven years. She had begun to menstruate at the age of 15, and her periods had been regular and painless, lasting eight or nine days. The last period had ceased on 2nd October. The vomiting, which had been going on for some days, was very severe. She also complained of some pain in the pelvis, but there was no vaginal discharge. On examining *per vaginam*, I found a somewhat elongated swelling lying obliquely backwards and towards the right. At first I thought it might be an extra-uterine gestation, but I could not make out any other body to represent the uterus.

My conclusion was that she was pregnant, but that the uterus was abnormal in position and shape. The examination, however, was very unsatisfactory, and I could not absolutely diagnose the condition. She was given bismuth and oxalate of cerium, which relieved the sickness for a few days, but it returned again twelve days later. She was then kept on peptonised milk, and this relieved her. On 26th November I persuaded her to go into the Maternity Hospital, as I was anxious to examine her thoroughly under chloroform. Two days later Dr. Gibson and I examined her. We found an ordinary sized vagina with a single cervix, but a bimanual examination revealed that there was a double uterus with one side enlarged and evidently pregnant. The enlarged half lay somewhat obliquely towards the right and back of the pelvis, while the smaller half was towards the left and front. The junction of the two parts at the cervix could be distinctly made out. It was somewhat puzzling that there was only one os to be seen. We, of course, refrained from passing a sound. Our diagnosis was that we had a double uterus to deal with, and that the right horn was pregnant.

The patient was treated for some days with rectal feeding, and the sickness abated. After that the course of the pregnancy was uneventful, except that she had occasional attacks of sickness. I did not examine her again until labour had commenced on 20th July. Abdominal palpation revealed that the uterine fundus lay towards the left side, and the head of the child was directed somewhat obliquely against the right side of the pelvis. The fundus was not so broad as it usually is. On passing my finger into the vagina, I found the os admitted the tip of the finger. It was high up, and the cervical canal passed backwards and towards the right. The presenting part could not be reached, but a rounded mass, evidently the head, could be felt, with a smooth membrane over it. On making a second vaginal examination, my finger passed into a small opening which gripped it tightly. I thought at first that it had passed into the dilated urethra, but on investigating more fully I found that my finger was really in a small opening in the hymen, and that I had discovered a second vagina. I enlarged the opening and then reached the cervix. The os was not dilated. I had the patient at once removed to the Maternity Hospital, where I examined her under chloroform. A careful investigation revealed that the half of the uterus connected with the patent vagina was not pregnant, but was lined with a thick decidua, which was easily removed. When the finger was in the cavity the body could be made out lying along the right side of the pregnant half for a couple of inches or so above the brim of the pelvis. It lay like a large limpet attached to the side of the pregnant half. I then fully ruptured the hymen of the second vagina, and found the os would admit the tip of the finger. The head was easily felt. The partition between the vaginæ was quite thick at the ostium, but thinner at the upper part. A careful examination failed to reveal even the minutest communication between the two canals. Dr. Gibson examined her with me, and Dr. Oliphant was also present. We decided to allow the labour to go on in the usual way.

Our former diagnosis had been correct so far, but we had thought the right half was the pregnant one. Considering that it was the side which communicated with the vagina through which all intercourse had occurred, this is not to be wondered at. Even if we had discovered the other vagina we would not likely have come to any other conclusion. The reason why we missed finding the second vagina when we examined, was because it was closed by the hymen, except for a very small opening. The patent half was quite open, and the remains of the hymen very apparent, We did not make any search for a second vagina, as we did not wish to disturb the patient any more than was absolutely necessary. The abnormal position of the pregnant half was probably due to its falling towards the back of the pelvis from its own weight. Rotation of the entire uterus had apparently occurred. After delivery we found there was a tendency to the recurrence of this.

After labour had gone on for twenty-four hours, very little dilatation had occurred. The contractions were fairly strong, but the obliquity of the uterus prevented the presenting part from bearing on the os. The largest Barnes' bag was inserted, and in two hours' time the os was well dilated. On removing the bag I found it had been forced through the upper part of the vaginal septum. The obliquity of the uterus had caused this. The patient was delivered with forceps. The child, a male, was alive, and weighed 7½ lb. The lower part of the septum was lacerated, and the perineum partially torn. The third stage of labour presented no difficulties. Both sides of the uterus were thoroughly washed out. The thick decidua had already been cleared out of the non-pregnant half. I then removed the septum and stitched the raw surfaces on the anterior and posterior walls with continuous catgut sutures, and repaired the perineum. The puerperium was normal, the temperature never rising.

How can we explain the fact that pregnancy occurred in the uterine half connected with the unpenetrated vagina? In the first place, I may say that I am perfectly sure that penetration had never taken place. The opening barely admitted the tip of the finger; and the fact that the hymen tore quite easily, showed that it was not a resilient one, which might have stretched before a penetrating organ. Cases have been observed where the spermatozoa were supposed to have passed up through the uterine cavity along one Fallopian tube and then across the uterus to the tube of the other side. Strange things do occur in connection with the propagation of the species, but, to my mind at least, this notion of the scouting powers of the spermatozoa has always seemed a little too far fetched. In the present case, the more probable path was through the small opening in the hymen. That penetration of the vagina is not necessary for impregnation, is a well recognised fact. I have seen more than one case of this, and have published one in the *Scottish Medical and Surgical Journal* (vol. i, p. 529), where the hymen was complete at the onset of labour.

It will be very interesting to watch the future pregnancies in this case to see if both sides ever become impregnated at the same time, or within a short time of each other. If the latter condition should ever arise, it will be most interesting. Such a condition, I believe, always exists in so-called cases of superfœtation. In fact, I am not absolutely sure that this had not occurred this time. Dr. Carstairs Douglas examined the decidua removed from the right half of the uterus, and he found a small mass embedded in it, which he thought might possibly have been a carneous mole. It is interesting to note that menstruation did not occur from the unimpregnated half.

10th November, 1901.—Since delivery, the patient has enjoyed good health, except that she has suffered considerable pain from a small fissure of the anus. She is nursing her child, and he is thriving well. To-day, Dr. Russell chloroformed her, and we made a thorough examination of the parts, and then stretched the anus to cure the fissure.

The perineum is complete, and there is no external evidence of a double vagina. The vaginal mucous membrane is smooth, but it is possible to trace where the septum had existed, especially at the upper part, where the remains of it can be felt and seen. A bimanual examination revealed that there was apparently only one external os which would admit the tip of the finger. To the left, the body of the horn which had been pregnant could be traced. It lay far back in the pelvis, with its fundus well towards the left side. The right horn, which was much smaller, lay towards the right of the pelvis also backwards and outwards. It could not be so easily traced, but the junction at the cervix was easily made out. The speculum revealed that in appearance the cervix in no way differed from an ordinary multiparous one. A sound passed into the left side went outwards and backwards for 2⅜ inches. I had some difficulty in passing a smaller one into the right horn. It would only pass for about 2 inches. The handles of the sounds crossed. The septum between the two cervical canals had been slightly destroyed, giving the appearance of a single os externum.

We have thus had to deal with a true bicornate uterus and double vagina. The vagina is now, of course, single. This is known as a uterus didelphys.

Labour in a double uterus may be interfered with in several ways. If both sides were pregnant, we might easily have the same difficulties as sometimes arise in twin cases, viz., locking, or both presenting parts being simultaneously driven into the brim. With one side pregnant, the non-pregnant half, which is sure to be enlarged, may obstruct. In Mrs. W.'s case this did not occur, as the body of the non-pregnant half was above the brim. The contractions of the uterus are very liable to be feebler than in an ordinary case, as the walls are ill-developed. It is well that this is the case, as otherwise rupture would be very apt to occur. Even as it is, it may occur. Malpresentations are common, and, as the uterine axis does not lie on the axis of the brim, the presenting part does not bear properly upon the cervical canal, and dilatation will be slow. This was markedly the case with Mrs. W.

Interference will be necessary in many cases. The operation to be done will, of course, depend upon the nature of the case. If delivery by the natural passages is impossible, Cæsarean section should be done. A Porro's operation or an extirpation may be necessary, but the uterus should be left if possible.

After delivery through the natural passages, severe post-partum hæmorrhage may occur, if the placenta has been attached to the septum, or the septum has been torn. In such a case, firm plugging would be the best treatment.

The decidua which lines the non-pregnant horn should always be removed. It may be expelled, but one must not trust to this. If it is retained, sepsis is very liable to occur.

As regards dealing with the vaginal septum where one exists, if it is torn during delivery, I think it should be completely removed. If it is not damaged, it may as well be left.

On Christmas day last, I performed craniotomy for Dr. Ramsay, in Parkhead, in a case with a badly contracted pelvis. To remove the placenta I had to pass my hand into the uterus, and I found that the placenta was attached up in the left horn of a bicornate uterus. The right horn would admit a portion of the hand. The fundus of the uterus was very broad, but not markedly cleft. In the centre of the fundus there was a very small subperitoneal fibroid. The partition between the two sides of the uterus did not extend down any distance. If this patient should again become pregnant, I am in hopes that she will agree to have Cæsarean section performed.

III.—CASE OF UTERUS SEPTUS WITH DOUBLE VAGINA, IN WHICH PREGNANCY TOOK PLACE AFTER REMOVAL OF THE VAGINAL SEPTUM, AND WAS COMPLETED NORMALLY.

By Dr. A. W. Russell.

Pregnancy in the different varieties of a double uterus, though of comparatively rare occurrence, has been of late repeatedly recorded. The condition known as uterus septus is not the rarest of these varieties; but the case I wish to describe to-night has some points of interest that warrant me in bringing it before the Society.

The patient was sent to me about eighteen months ago by Dr. Gracie, because he had found a vaginal septum, and suspected further abnormality.

She was 27 years of age, and only a few months married. She complained of dyspareunia. She had already been seen by other doctors, and had once been specially examined by a consultant, but the true condition had previously been missed. The patient was tall, and of healthy appearance. Menstruation was regular, and in every way natural, up to the time of marriage. The breasts and external genital organs were normally developed. The vagina was of normal length, and had a mesial vertical fleshy septum, which was attached to the cervix, and extended right down to the vaginal entrance, where its breadth was greater, and therefore allowed its edge to fall against the side of the vagina. The right side was rather the more roomy of the two, but both were funnel-shaped, so that anyone examining *per vaginam*, and overlooking the septum, would think that there was a defective development of the upper end of the vagina and of the uterus beyond it. No communication between the two passages could anywhere be discovered. An os uteri was distinctly noted on both sides of the septum, but as the patient had missed a menstrual period, further examination was not made. Examination under chloroform and the removal of the septum were advised, if it were found that pregnancy had not already taken place. As menstruation recurred a few weeks later, examination under chloroform was made. The uterine cavity was found to be completely divided by an antero-posterior septum into a right cavity nearly the size and shape of a normal uterine interior, and a left and smaller cavity more tubular in shape. Two sounds, one in each cavity, nowhere touched one another. The ovaries were normal in size. To relieve the dyspareunia, due to the narrowing of the upper reach of the vagina, the vaginal septum was cut through and trimmed off. The patient soon after this became pregnant, but she aborted at the end of two months. She again became pregnant about the middle of May. Two months later, after some previous pain, getting gradually worse for several weeks, she had some hæmorrhage and abortion was threatened. Under rest and other treatment this passed off, but pain continued till the fifth month, and after a severe attack of pain she felt something give way, and there was a little show of hæmorrhage. I believe that this indicated the rupture of the uterine septum, as pregnancy was not afterwards disturbed by pain. I had an opportunity of examining her after this, and found that pregnancy was developing in the right cavity, the left and undeveloped half being distinctly made out as a thickening on the left and posterior aspect of the uterus. I was present afterwards at the confinement, which took place on 5th February. It was not hurried, and chloroform was used to control expulsive efforts. There was no perineal nor vaginal laceration. The second os uteri could not be felt, and there was no deep cervical laceration. The placenta was not in any way abnormal. After a normal puerperium, I was able, at the end of a fortnight, to satisfy myself that the uterine cavity was now single, there being no sign of septum either at the cervix or in the uterus.

Dr. Edgar asked if Dr. Jardine had examined carefully for an opening in the vaginal septum, as this would have afforded the most probable explanation of the impregnation of the opposite half of the uterus. In the absence of such an opening, Dr. Jardine's hypothesis was probably correct.

Intra-peritoneal transmigration of spermatozoa, however, could not be regarded as an impossibility, for it was well known that ova occasionally migrated to the opposite tube. It appeared that in each of the two cases described by Drs. Jardine and Russell there was only one cervix, and ultimately only one external os. In a case seen by the speaker two years ago, there were two distinct cervices and corpora (uterus didelphys). There was also a double vagina, but the septum presented a large opening in its centre. Patient had been delivered of a healthy child at full term ten months previously. Examination showed that it was the right uterus which had been gravid, and that birth had taken place through the right vagina. Menstruation had not occurred during pregnancy. Dr. Edgar had also seen two or three cases of labour in which the uterus had been moderately bicornate, but in none of them had there been any difficulty.

Dr. G. Balfour Marshall said that he had only seen one case of uterus bicornis. There was a single broad cervix with two distinct ossa leading respectively into separate uteri. The patient had never become pregnant. He had recently examined a patient during her third pregnancy, who had menstruated regularly throughout all three pregnancies. The fundus felt broader than was normally the case; and, although he had not had an opportunity of examining her since, he regarded it as an example of uterus septus, as he could not otherwise account for the possibility of regular menstruation, with no diminution in amount of flow, during pregnancy. The fact of pregnancy occurring in the opposite uterus in Dr. Jardine's case could be explained by the passage upwards of spermatozoa deposited in the vulva, a not infrequent occurrence, or by the passage of a fertilised ovum along the opposite tube.

IV.—CÆSAREAN SECTION, WITH NOTES OF A SERIES OF NINE SUCCESSFUL CASES.

By Dr. J. M. Munro Kerr.

Dr. Kerr's paper appears as an original article at p. 420.

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1901-1902.

MEETING XIV.—20TH MARCH, 1902.

The President, DR. JOHN STEWART, *in the Chair.*

DISCUSSION ON THE CURABILITY OF PHTHISIS PULMONALIS.

In opening the discussion on the curability of phthisis pulmonalis,

Professor T. M'Call Anderson spent some time in pointing out the advantages that were seen to follow the use of tuberculin in the treatment of the disease. He had long been an advocate of the open air treatment. With reference to long sea voyages he remarked that cases for such treatment should be chosen with discrimination. He believed in the efficacy of a residence in a high mountain valley where pure air could be breathed. Sanatoria for the treatment of phthisis ought to be built on a site readily accessible, with a dry and porous soil, and in an atmosphere as pure as possible. He thought that the results of the treatment of pulmonary consumption in sanatoria were most encouraging.

Dr. Geo. Middleton remarked that in his opinion the treatment of pulmonary tuberculosis, by means of sanatoria, was on the right lines. He contended, however, that a definite statement regarding the utility of sanatoria could not in the meantime be given with confidence. No doubt, many cases of phthisis after treatment in sanatoria put on weight and flesh, but the physical signs often remained the same. No matter how early in the course of the disease he was enabled to treat pulmonary phthisis, he was always apprehensive as to the result. In treatment he advocated fresh air, good food, and cod liver oil—a method which, in his experience, tended to lessen the virulence of the disease. He could recall to mind many cases of phthisis that recovered under this line of treatment. With regard to the use of tuberculin, he held the opinion that the injection of this substance was not without risk.

Dr. James Hamilton remarked that he had seen many cases of phthisis pulmonalis in which recovery had undoubtedly taken place. He held the opinion that many cases of so-called bronchial catarrh were in reality cases of phthisis pulmonalis.

Dr. Chas. E. Robertson said that whenever tubercle bacilli were found in the sputum in cases of phthisis pulmonalis he gave a very grave prognosis. He did not think that a cure was a common result of treatment, although improvement in the patient's condition was occasionally seen. He strongly objected to the constant preaching to the public of the curability of phthisis. With regard to sanatoria, he welcomed them, not on account of the curative effects of the treatment therein, but because they were a means of preventing the spread of phthisis.

Dr. L. Burges thought that with regard to treatment in phthisis pulmonalis there was ground for an optimistic spirit. He had seen cases in which the tubercle bacilli were found, and in which a cure resulted under treatment.

On the motion of the *President*, it was agreed to adjourn the discussion until next meeting of the Society.

MEETING XV.—3RD APRIL, 1902.

The President, DR. JOHN STEWART, *in the Chair.*

ADJOURNED DISCUSSION ON THE CURABILITY OF PHTHISIS PULMONALIS.

Dr. Ebenezer Duncan, in an interesting manner, reviewed the treatment of pulmonary consumption in the earlier part of the nineteenth century, and pointed out that the open air treatment—so much lauded to-day—was advocated in England by Dr. George Bodington as early as the year 1840. Speaking particularly of the curability of the disease, Dr. Duncan gave a detailed account of cases he had seen in private practice and in hospital in which undoubted cures had taken place. He had known patients completely restored to health in whom there had been found all the signs of pulmonary consolidation and excavation, and in whom the tubercle bacilli had been found abundantly in the sputum. Particular examples were described, in which even in a short space of time remarkable improvement had taken place. With regard to treatment, he believed that a persistent germicidal course was very efficacious. Carbonate of guaiacol, in large doses, was of great service, and he often gave creosote and cod liver oil (5 minims of the creosote to 1 drachm of oil). He strongly recommended inhalations of pinol and eucalyptol, and in the absence of catarrh of the bronchi he used formalin in 10 to 20 per cent solution. As regards diet, he believed in high feeding. In addition to the ordinary diet, his patients received four pints of milk per day. He had faith in the advantages to be gained by the open air treatment, and carried it out systematically in his practice.

Dr. Thos. Forrest remarked that when hæmoptysis was present the treatment seemed to be more favourable, and the same result was found in phthisical patients with the rheumatic diathesis. He was inclined to think that by overfeeding there was some danger of nephritis.

Dr. T. K. Monro spoke of the different types of pulmonary phthisis, in which experience had shown that a favourable prognosis might be given, and cited the hæmorrhagic form as an example. He gave details of some cases that had come under his observation, in which recovery had taken place in a remarkably short space of time.

Contributions to the debate were made by *Drs. W. Watson, A. Tindal, Coulson Howie,* and *T. Russell.*

The President, in a short speech, summed up the discussion, and remarked that, from the evidence laid before them, the conclusion seemed to be that only to a limited extent could phthisis pulmonalis be regarded as a curable disease.

REVIEWS.

Anæsthetics and their Administration. By FREDERICK HEWITT, M.A., M.D. Cantab. Second Edition. London: Macmillan & Co. 1901.

IN publishing a second edition of his work, the author has taken the opportunity of considerably expanding it, but has only added thereby to its value. He begins with a very admirable account of the physiology of anæsthesia, and in the following chapters on the "Selection of Anæsthetics and Methods," gives a capital survey of the conditions and circumstances which might influence one in deciding which drug is suitable for any special case. The management and treatment of the dangers of anæsthesia are very fully and judiciously discussed in three chapters; the chapters on the after-effects are the least satisfactory, but it is probable that this phase of the subject is the one which comes least prominently before the professional anæsthetist, though it is one of much importance to the patient and the surgeon in charge.

We have derived very great pleasure from reading this book, and can confidently recommend it as being the most complete work on the subject with which we are acquainted.

Nothnagel's Encyclopedia of Practical Medicine (Saunders' English Edition). Vol. II: Variola, Vaccination, &c. Edited, with additions, by JOHN W. MOORE, M.D., F.R.C.P. Authorised Translation from the German, under the Editorial Supervision of ALFRED STENGEL, M.D. London: W. B. Saunders & Co. 1902.

THE present volume, in which the description of the infectious fevers is continued, is another admirable instalment of Nothnagel's great system of medicine in its English form. Variola is described by Dr. H. Immermann, of Basel, who also deals with vaccination and small-pox inoculation. Chicken-pox is discussed by Dr. Th. von Jurgensen, of Tübingen; Asiatic cholera and cholera nostras by Dr. Liebermeister of the same medical school. Dr. Hermann Lenhartz, of Hamburg, writes upon erysipelas and erysipeloid, and Dr. Georg Sticker, of Giessen, on whooping-cough and "Bostock's summer catarrh" or hay fever. The names of these contributors are a sufficient guarantee as to the authoritative character of the work, and the editor of the volume is a veteran in medical science who speaks from an experience of more than thirty-three years. To those who wish a comprehensive, authoritative, and well written account of these very important diseases, we have every confidence in recommending this fine volume.

The Health Officer's Pocket-Book. By E. F. WILLOUGHBY, M.D. Second Edition. London: Crosby, Lockwood & Son. 1902.

THIS elegant little book is an ideal one for the medical officer of health. In its compass of 400 pages everything is included which can be required for reference, in a succinct and compact form. This, the second edition, has been brought up to date, and is in all respects trustworthy. While it is primarily meant for medical officers of health in England, numerous cross references to the Public Health Acts in the other divisions of the kingdom enable it to be of equal service to the medical officer of health in Scotland and Ireland. The first section, dealing with the mathematics of public health, is of special value, as this information has as a rule to be obtained in fragmentary form in various other works. The medical officer of health has frequently to be the skilled or scientific adviser even with regard to engineering problems—in the first instance, at all events—so that the advantage of having a handy book of reference in regard to technical details which do not exactly belong to the province of the medical officer of health is apparent. Section VIII (pp. 209-220) deserves special mention for its sound advice to the health officer, and will repay not only careful perusal but close attention to the suggestions indicated or implied therein. For example, with regard to the removal of snow from the footpaths Glasgow is distinctly behind the Public Health (London) Act of 1891. In the same way the section on pail and earth closets (p. 99) will give rise to some suspicion that the modern tendency towards costly sewerage systems is not in all cases a movement in the right direction. In the short section on starches it is a little strange to find no mention of maize, the cheapest of the common forms and thus the most likely to be employed for sophistication of other starches or foods partly consisting of starch. Again, on p. 125 formaline is described as a 40 per cent *alcoholic* solution of formic aldehyde. As a whole, however, the book is singularly free from error of any kind, and the work is worthy of the very highest praise.

The Sanitary Inspector's Handbook. By ALBERT TAYLOR. Third Edition. London: H. K. Lewis. 1901.

THE second edition of this book having been reviewed at some length in the *Journal* (vol. xlviii, p. 454), we propose now to notice only those points wherein this edition differs from that which preceded it.

The first noteworthy addition is a synopsis of the provisions of the Public Health (Scotland) Act, 1897, and of the Bye-Laws of the London County Council, with reference to the construction of drains, water-closets, soil-pipes, &c. This will, doubtless, prove of advantage to the student whose intention it is to proceed to the examinations for the certificates of the Sanitary Institute and the Sanitary Association of Scotland.

In all other respects, with the exception of amplifications of the text at certain places, the book is unchanged, and we reaffirm the view which we formerly expressed that the work will prove of excellent service to those professionally engaged in the public health service.

A Manual of Hygiene and Sanitation. Second Edition. By SENECA EGBERT, A.M., M.D. London: Henry Kimpton. 1901.

This *Manual* covers a good deal of ground, including, as it does, bacteriology, air, ventilation and heating, water, food, stimulants and beverages, personal hygiene, school hygiene, disinfection and quarantine, removal and disposal of sewage, military hygiene, vital statistics, and examination of air, water, and food. The work being intended for the medical student, discussion of the above subjects is limited to a little over four hundred pages. A want of proportion is observable even in these. For example, the subject of bacteriology is dismissed in twenty-seven pages, and these are confined to the treatment of elementary technique and the doctrine of immunity.

Treating of the cause of the noxious effects of air fouled by respiration, the author adopts the view of Mitchell, Billings, and others in America, and of Haldane in this country, that diminution of oxygen and proportional increase of CO_2 have largely to do with the production of ill-health, while, at the same time, he agrees with the more common opinion that organic matter in the air is also an important factor. We note that the author makes no reference to the effects upon workmen of abnormally high atmospheric pressures which are so commonly employed in tunnel-driving, bridge-pier building, &c., and which are grouped together under the names of caisson disease or compressed-air illness. In the chapter on ventilation and heating, the scantiest consideration is given to artificial methods. The reader entirely fails, for example, to comprehend what is really meant by the term "plenum" ventilation in its practical application to buildings. The system of warming by hot-air furnaces, as used so generally in America, is fully described.

On the question of water-supply from wells in respect of probable purity, the author unfortunately adheres to the unscientific definitions of shallow and deep as applied to wells, which are now given up, viz., that a shallow well is one which is less, and a deep well one which is more, than 50 feet in depth. This is by no means true. The definition ought rather to depend upon the character of the strata through which the well-shaft passes, irrespective of its actual depth. Respecting the presence of lead in a potable water, the author is of opinion that no water should be used which contains more than one-twentieth of a grain of that metal per gallon. It is about time that this standard should be given up by all who write on public health, as it is by most. Such an amount is positively dangerous to the welfare of consumers. Moreover, the plumbo-solvent action of water may be overcome in the case of peaty waters which contain organic acids, as ulmic, humic, and others, by the use of lime, and, in the case of other waters, by the use of silica, in the form of crushed flints or granite in a filter-bed, before distribution to the consumers.

The opinion which is expressed by the author that yellow fever, scarlet fever, and diphtheria may be propagated by water supplies, is one which is not based on exact proof; indeed, there is little or no evidence to support such a view. Notwithstanding the extensive observations and discoveries which have been made of late years respecting the prime cause of malaria, the author expresses the opinion that drinking-water often serves as a medium of transmission of the disease. Of the purification of water, the author gives an excellent practical account of filtration on the large scale, and also of the value of the Forbes steriliser on the small scale. This steriliser, which is portable and effective, has been adopted in the United States army. It has proved, experimentally, that it is capable of supplying a practically sterile water.

The chapter on foods, which is necessarily much condensed, is well written. We note, however, that while the author recommends that milk should be "properly sterilised," he omits to say anything upon the mode of sterilisation or of Pasteurisation, which are different processes.

Under the heading of personal hygiene, the subjects of heredity, marriage, exercise, bathing, clothing, and light are shortly discussed. A useful chapter follows on school hygiene.

The chapter on disinfection and quarantine is one of the best in the book, although, in the treatment of the latter, the author confines himself to the quarantine laws of the United States.

This purely American aspect of the book is noticeable also in the chapter on the removal and disposal of sewage. "The soil-pipe," says the author, "is usually located almost entirely within the house, although," he adds, "were it not for the danger of its contents freezing, it would be better to have it fastened to the wall outside." This practice of inside fixing of soil-pipe, due to the above reason, is common all over America; but to prevent the increased risks consequent upon the practice, it is constructed of heavier materials than in this country.

The subject of purification of sewage is dismissed in five pages, and the septic system in less than two dozen lines.

The chapter on vital statistics takes note of the outstanding points usually treated under this heading.

The last chapter deals with the examination of air, water, and food, in which appropriate tests for particulate bodies and gases in air, for impurities in water, for determining the purity of milk, and for the presence of adulterants in butter and bread, are given in some detail.

Our general opinion, from a careful perusal of the book, is that, upon the whole, it is carefully, though in parts loosely, written, and it will prove of greatest value to the American student of medicine, since it has been written by an American from an American point of view.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By WALTER K. HUNTER, M.D., D.Sc.

A Case of Tubercular Pericarditis with Effusion: Recovery after repeated Tappings.—The following case is from Professor Osler's wards in the Johns Hopkins Hospital, and it is reported by Dr. Florence Sabin in *American Medicine*, 8th March, 1902.

The patient, a lad, aged 20, was admitted to hospital on 31st March, 1901, complaining of pain in the precordial region. The illness had begun two months before with a sharp, stabbing pain in the right side of the chest, which was worse on taking a deep breath. Then, five weeks later, the pain over the heart set in, and it was so severe that the patient could no longer continue at his work.

On admission, there was found lack of resonance and diminished breath-sound over the lower right side of chest. In the precordial area a loud friction sound was heard, and this seemed to obscure to some extent the cardiac sounds. The apex impulse was quite visible, and the cardiac dull area was normal in extent. About a week later signs of pericardial effusion developed, and this was accompanied with a change in the pulse-rate and in the range of temperature; for while prior to 8th April the temperature varied from 100° to 102°, with the effusion the variation ranged from 97° to 104·7°. The cardiac dull area then gradually increased in extent till on 24th April it extended from 5½ inches to left of mid-line to 1 inch to the right of the mid-line. The friction sounds and heart sounds were now very indistinct, and dyspnœa along with a severe paroxysmal cough were prominent symptoms. The apex impulse was no longer visible, there was bulging of the precordium, and signs of compression of the left lung were evident.

On 25th April a needle was inserted in the fifth interspace, three-fifths of an inch to the left of the nipple line, and 10 cc. of a clear, straw-coloured fluid withdrawn. On 27th April the pericardium was again aspirated at the same point, and 25 cc. removed. The patient was much better after this, and the dulness was lessened, though to no great extent.

On 11th May he was again tapped, both in fifth and sixth interspaces, and 50 cc. withdrawn. For a few days the boy was much more comfortable, but on 14th May he complained of severe pain in the right mammary region, where a loud pleural friction was to be heard. By 7th June the signs of pericardial effusion had much diminished, and the apex impulse was within 4 inches of the mid-line. No pericardial friction sound could now be heard, and the heart sounds were quite distinct. There were, however, signs of a considerable effusion into the right pleural cavity, and on aspiration over a litre of serous fluid was removed. This side of the chest filled up repeatedly, so that it had to be tapped fourteen times, over 20 litres of fluid in all having been withdrawn. The last tapping was on 7th September, after which the fluid did not reaccumulate.

The patient was seen again on 19th June, 1902, and there were then no signs of pericardial or pleural effusion. The apex impulse was within the nipple line, and the sounds were pure and without any accompaniments; but there was evidence of some partial collapse of the lower part of the right lung, and probably there was a thickened pleura.

It is to be noted that tubercle bacilli were never found in the sputum or in the pleural exudation, but they were found on one occasion in the pericardial effusion.

Acute Lymphatic Pseudo-Leukæmia (Hodgkin's Disease).—Dr. Heffron reports the following case in *American Medicine* for 12th April, 1902.

The patient, a young man, aged 23, was first seen on 27th July, 1901, complaining of eczema and a cough. The eczema had been present, more or less constantly, since infancy; the cough was of about four weeks' duration. On examination, the eruption was found mostly on the hands and shins, but small patches were also to be seen on the trunk, thighs, and scrotum. There was considerable enlargement of the right cervical glands, and this was probably the cause of a slight dulness to percussion and alteration in the breath sounds to be made out at the right apex. The glands in the axillæ and groins were also enlarged, but to no great extent. There were no tubercle bacilli in the sputum, and examination of the blood gave evidence of nothing beyond a simple anæmia. The temperature was 99°.

During the next four weeks there was little alteration in the symptoms. The eruption, however, had practically disappeared, and the glands in the neck were distinctly larger in size: the temperature scarce ever rose above 100°. But from 27th August onwards the course of the illness was more rapid; the temperature began to rise (ranging from 100° to 103°), and the glands in the thorax and neck increased in size, till ultimately the patient died of suffocation on 7th September, less than six weeks after coming under observation.

At the *post-mortem* examination the pleural and pericardial cavities contained considerable quantities of serous fluid. But excepting the enlargement of the lymphatic glands, the other organs of the body were quite healthy. The glands enlarged were the mediastinal, cervical, bronchial, and gastric; the mediastinal and bronchial formed an almost complete girdle round the trachea and large vessels at the base of the heart. These glands, along with the cervical glands, weighed 48 oz. Microscopic examination showed proliferation of lymphoid and connective tissue elements; sections of the blood-clot in the heart showed no increase in the number of lymphocytes in the blood. The liver weighed 61 oz., the spleen 3 oz.

In referring to the nature of this disease, Dr. Heffron tells us that there are two views which may be put forward, namely, that of Ehrlich and Lazarus, who hold that the process is essentially a lympho-sarcoma, and that supported by Sternberg, maintaining that pseudo-leukæmia is a tuberculosis of the blood-forming apparatus. In the case just recorded there was no evidence whatever of any tubercular lesion, but, on the other hand, the microscopic examination of the lymphatic glands showed the characteristics peculiar to lympho-sarcoma.

The Condition of the Knee-reflexes in Asthma.—Dr. Moncorgé has examined the knee-reflexes in 142 cases of asthma, 67 being men and 75 women. In 47 of these the knee-reflex is described as being very much exaggerated, in 64 as exaggerated; in 30 it was normal, absent in 1.

In discussing the subject, the author says that this exaggeration of the knee-reflexes is just what one would look for in asthma. For in this disease most of the other reflexes are also exaggerated. Examples of this are to be found in the spasms of the larynx and bronchi, so readily induced by irritation of any part of the respiratory mucous membrane. The same holds good for irritation of the cutaneous surfaces, as in those cases in whom exposure of the arms to the air sets up an attack of asthma. And so exaggeration of the patellar tendon reflex is but one of the phenomena which show in this disease an increased reflex excitability all over the body.—(*Lyon Médical*, 12th January, 1902.)

A Case of Hemimyoclonus.—The following case is to be regarded as an example of the condition called paramyoclonus multiplex, but while in that disease the muscles on both sides of the body are affected, here the myoclonus was confined to the right side only.

The patient, a man, aged 26, was admitted to hospital with enteric fever on 21st November, 1901. The fever ran a natural course, and by the end of four weeks convalescence was established. But coincident with the disappearance of the fever a hemimyoclonus developed. On enquiring into the previous history of the patient it was found that from the age of 9 up till the commencement of the fever he had suffered from a right-sided hemimyoclonus, which had been present, except with rare intervals, and these of short duration, for all these years. With the onset of the fever the clonus entirely disappeared, and did not come back again till the 17th or 18th December, *i.e.*, when the patient was considered convalescent. The condition of the patient at this time was striking. There was constant movement of the muscles of the right arm and right leg, and of right side of thorax and abdomen. The contractions of these muscles were not of great amplitude, and did not produce any definite or co-ordinate movements of the limbs. They were rather unequal and irregular as regards extent and rhythm, and they numbered about 80 per minute. They were, perhaps, best described as being similar to the movements produced by the action of a faradic current of moderate strength. In addition to the clonic movements affecting muscles and groups of muscles, fibrillary contractions were to be seen in certain individual muscle fibres. The patient could use his arm, but only with some effort. He could even write, but when doing so a tremor was noticeable, and this gave the writing something the character of that seen in commencing general paralysis. Walking was also rather difficult. The movements of the muscles could be controlled for a short time by voluntary effort, but otherwise they were constant except during sleep, when they entirely disappeared. Stimulation of the skin increased the clonus, as also any emotional condition. In repose it was much less. There was exaggerated knee-jerk and ankle-clonus. The electrical reactions of the affected muscles were normal. All the muscles and reflexes on the left side were quite normal. The fields of vision were of normal extent, and there were no evidences whatever of hysteria.—(By MM. Combemale and Ingelrans, *L'Echo Médical du Nord*, 6th April, 1902.)

DISEASES OF CHILDREN.

By R. BARCLAY NESS, M.A., M.B., C.M.

Amaurotic Family Idiocy.—A. C. Cotton, M.D., of Chicago, in a leading article in the *Archives of Pediatrics* for January, 1902, gives the facts relating to a case of this rare condition.

The patient was a girl, aged 2 years, of Hebrew parentage, a fact of some etiological importance, because in all the hitherto published cases where the nationality has been given the patients have been of this race.

The family history was negative, except for the facts that a paternal uncle died of tuberculosis, and the father's cousin's only child died in convulsions at 20 months, blind, idiotic, and never having been able to stand or sit erect.

The parents of the child were not blood relations; they had other children, but none were similarly affected; there was no evidence of syphilis.

Gestation and birth were normal, and the initial weight of the child was 9 lb. Development was practically normal during the first nine months, but after this the child showed progressive muscular failure, with increasing disinclination to use the limbs. Blindness gradually developed. She had been from earliest infancy nervous and easily startled.

When first seen, the child was plump and of average size, but anæmic. Head measured 19 inches in circumference. Face was expressionless, but drawn to the right. She was totally blind, and there were present absence of response to light, nystagmus, convergent strabismus, and inequality of the pupils. The palate was highly arched. There was some evidence of atrophy of the lower extremities, associated with a spastic condition both of legs and arms. This latter condition was most marked in right arm.

Reflexes were exaggerated. A striking feature was the sensitiveness to sound and touch. The slighest noise or the least jar brought on a spasm. The arms were rotated internally and adducted; there was some frothing at the mouth, and the whole body was slightly involved. These spasms would last from fifteen to sixty seconds, and were followed by moaning. They were repeated every time she was disturbed. The examination of the eyes by Dr. Wescott showed that the discs were normal and the choroidal rings distinct. The choroid seemed perfectly normal unless for the fact that there was present a large, dark, reddish-brown disc occupying the situation of the macula, and surrounded by a larger whiteish zone about twice, or two and a half times, the diameter of the optic disc. It was possibly a trifle longer horizontally than vertically; apparently denser nearer the centre immediately around the dark coloured disc, and gradually shading off into the normal red of the surrounding eye ground. The brown disc at the macula was regular in outline and decidedly not as red as the spot which we see in embolism of the central artery of the retina. The retinal vessels which entered the area could be seen through it.

The child was not seen again, but the subsequent history obtained from the mother showed that some difficulty in swallowing previously present had increased, that the child had grown gradually weaker, and died during a convulsion two months later.

Among the characteristic features usually present in this condition there are four which are constant—idiocy, characteristic symmetrical changes in macula lutea, paralysis, and early death. Of other symptoms recorded there may or may not be nystagmus, strabismus, spasticity, flaccidity, convulsions, tremors, exaggerated normal or subnormal reflexes, dysphagia, hyperacusis, and hyperæsthesia. Without the characteristic changes of the macula lutea, the disorder might be mistaken for spastic diplegia, congenital blindness in an idiot, or cerebellar tumour.

The following facts relating to the history and pathology of this condition, culled from the article by Russell and Kingdon in Clifford Allbutt's *System of Medicine* (vol. vii, pp. 728-734), may be of some interest:—

"Attention was first called to this disorder by Mr. Warren Tay in 1881; and since then twenty-eight cases have been published, including Mr. Tay's patients. Ophthalmologists have contributed most of the cases on record, as the peculiar and characteristic ocular changes form a prominent part of the clinical picture of the disease. B. Sachs (New York), Peterson, Hirsch, and Kingdon have alone been successful in obtaining autopsies, the latter observer being particularly fortunate in that he has been able to supplement his clinical observations by autopsies and subsequent microscopical examinations of the nervous system in three members of a family of seven, five of whom were affected."

The essential changes met with in microscopical examination is degeneration of the neurons of the cerebral cortex, more especially of the central convolutions. Degeneration of the neurons may be traced through the corona radiata and internal capsule to the pyramids and to the direct and crossed pyramidal tracts. Degeneration of the cells in the anterior and posterior horns of the spinal cord has also been made out.

The ocular changes consist in atrophy of the optic nerve and degeneration of ganglion cells in the retina, without any evidence of antecedent inflammatory mischief.

The changes in the macular region are associated with a thickening of the retina at this part, a change due to a spacing out of the outer molecular layer as if by œdema.

References to literature may be obtained in the number of the *Archives of Pediatrics* and in the article in Allbutt's *System of Medicine* above referred to.

Gangrene of the Lung.—In *Archives of Pediatrics* for March, 1902, two leading articles occur on this condition.

The first, by Francis Huber, of New York, in which he gives his personal experience of seven cases in children between the ages of 3 and 5. Three of these were fatal, but in none was an autopsy obtained, and they are only referred to very briefly. Three of the others present some interesting points:—

1. A boy, aged 5 years, presented well marked signs of localised trouble in one lung, associated with offensive breath, all of which signs disappeared gradually after the coughing up a portion of a peanut which had accidentally entered his larynx with some candy some considerable time before.

2. A case of empyema, the true nature of which was indicated by a large piece of necrotic pulmonary tissue being washed away while irrigating the pleural cavity after operation.

3. A case of a boy, aged 3 years, treated by resection of rib and drainage, after which improvement was gradual. The sinuses healed, and the patient was ultimately dismissed in good condition.

The other paper in the same *Journal* is by Walter Lester Carr, of New York. In this paper are given all the details of a case of pulmonary gangrene in an infant one year old. The child was under observation for over a month, suffering from both broncho-pneumonia and intestinal catarrh. The pneumonia involved first the right lung then the left.

At no time during the child's illness was there any fetid odour of the breath, neither was there any fetid expectoration. The sputa coughed up were white or whitish-yellow, had no green nor brown tinge, and were not streaked with blood. The baby, however, raised much more than was usual for one of its age. The character of the temperature curve, and also the general condition pointed to a septic process, but this could not be definitely determined to be a gangrene in addition to a septic broncho-pneumonia. It was thought that the symptoms were increased by the disturbed digestion and the intestinal catarrh, which persisted almost the whole period of the pneumonia.

The following, taken from the account of the *post-mortem* examination, is of interest:—

Lungs—No pleurisy; *left lower lobe* almost completely solid with red broncho-pneumonia, and containing in its posterior half a darker, brownish, softened (gangrenous) area, 2½ inches by 1 inch by 1 inch in size, extending to within one-eighth of an inch of the pleural surface.

Several small pulmonary veins in this lobe contained soft, dark thrombi; *upper lobe* showed a small area of gangrene just above the posterior inferior border, but it is in an earlier stage than that in the lower lobe. Œdema throughout both lungs was very marked.

Right lower lobe, acute broncho-pneumonia occupying about half the lobe, with a gangrenous area about half as large as that in the left lung; *upper lobe*, broncho-pneumonia in the apex only; bronchial lymph nodes small and red.

There was also found marked fatty infiltration of the liver, and evidence of catarrhal entero-colitis.

A valuable part of this paper is the account of the literature of the subject, which is given in a very exhaustive manner.

In the same *Journal* the editor points out that there are no absolute symptoms, nor set of symptoms, that discloses the destructive character of the disease, or separates its features from many that are common to septic pneumonia, empyema, and bronchiectasis, with any one of which the gangrenous process may be associated.

The physical signs are not always distinctive of consolidation, and when a pneumonic area is present a focus of gangrene which has undergone softening will produce sounds similar to those of a tubercular process. As the gangrene is a destruction of lung tissue, some help may be gained by an inspection of the sputa. Unfortunately, however, this is frequently wanting, as are the gangrenous odour and sweetish breath which are described as distinctive when detected in older patients. It is best stated that the constitutional symptoms are out of all proportion to the physical signs. Blood examinations do not, as yet, assist much, a high leucocytosis being the only fact as yet established, while bacteriologists have only shown that any one of the pyogenic group of bacteria may be present in the gangrenous areas. Where a diagnosis can be made, the success of treatment is not in medication, but from surgical interference. Over 60 per cent of a series of cases recorded by Herczel were saved by radical measures.

Books, Pamphlets, &c., Received.

Clinical Lectures on Stricture of the Urethra and Enlargement of the Prostate, by P. J. Freyer, M.A., M.D., M.Ch. Second Edition. London: Baillière, Tindall & Cox. 1902. (5s. net.)

Venereal Diseases: A Manual for Students and Practitioners, by James R. Hayden, M.D. Third and Revised Edition. Illustrated with Sixty-six Engravings. London: Henry Kimpton. 1902. (7s. 6d. net.)

A Manual of Surgical Treatment, by W. Watson Cheyne, C.B., M.B., F.R.C.S., and F. F. Burghard, M.D. and M.S. Lond. In Six Parts. Part VI, Section I: The Treatment of the Surgical Affections of the Tongue and Floor of the Mouth, the Pharynx, Neck, Œsophagus, Stomach and Intestines. London: Longmans, Green & Co. 1902. (18s.)

Essentials of Obstetrics, by Charles Jewett, A.M., M.D., Sc.D., assisted by Harold F. Jewett, M.D. Second Edition. Illustrated by 80 Woodcuts and 5 Coloured Plates. London: Henry Kimpton. 1902. (10s. 6d. net.)

A Manual of Ophthalmoscopy for Students and General Practitioners, by J. E. Jennings, M.D. With 95 Illustrations and 1 Coloured Plate. London: Rebman, Limited. 1902. (7s. 6d. net.)

The Clinical Pathology of the Blood, by Dr. Rud. R. v. Limbeck. Translated from the Second German Edition by Arthur Latham, M.A., and John Nachbar, M.A., M.D. London: The New Sydenham Society. 1901.

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Diseases of the Intestines: Their Special Pathology, Diagnosis, and Treatment, by John C. Hemmeter, M.D., Philos.D. In Two Volumes. Vol. II. With Plates and Many Other Original Illustrations. London: Rebman, Limited. 1902. (25s. net.)

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GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR THE FOUR WEEKS ENDING 24TH MAY, 1902.

	Week ending			
	May 3.	May 10.	May 17.	May 24.
Mean temperature, . .	45·5°	44·8°	45·0°	49·3°
Mean range of temperature between day and night, .	15·8°	17·6°	12·7°	13·4°
Number of days on which rain fell, ...	1	0	5	4
Amount of rainfall, . ins.	0·23	0·00	0·43	0·23
Deaths registered, . . .	307	290	322	336
Death-rates, ...	20·6	19·4	21·6	22·5
Zymotic death-rates, . .	2·7	1·5	2·1	1·3
Pulmonary death-rates, .	6·5	8·1	7·3	7·2
Deaths—				
Under 1 year, . . .	61	63	54	59
60 years and upwards, .	63	55	66	94
Deaths from—				
Small-pox, ...	1	...	...	1
Measles, ...	4	3	4	2
Scarlet fever, . . .	...	2	1	3
Diphtheria, . . .	2	3	4	...
Whooping-cough, . .	16	8	10	5
Fever, ...	3	...	2	1
Diarrhœa, ...	14	6	11	7
Croup and laryngitis, .	...	...	2	1
Bronchitis, pneumonia, and pleurisy, . . .	76	63	58	88
Cases reported—				
Small-pox, ...	2	1	4	1
Diphtheria and membranous croup, ...	8	7	11	7
Erysipelas, . . .	24	31	27	24
Scarlet fever, . . .	53	40	50	61
Typhus fever, . . .	...	..	...	1
Enteric fever, . . .	19	12	21	12
Continued fever, . .	2	1	...	...
Puerperal fever, . .	1	2	4	...
Measles,* . . .	87	82	107	108

* Measles is not notifiable.

Sanitary Chambers,
Glasgow, *26th May, 1902.*

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